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ABSTRACT

This proposal for the establishment of a library or information center for an environmental and engineering consulting firm in Texas is divided into two phases--current problems, and future expansion of library service. Major considerations include informational problems of the existing small library facility, i.e., locational and subject access, need for current awareness information, lack of adequate library space, and general procedural problems; proposed functions of the new library; and a budget for the first year of operation, including costs of equipment, materials, supplies, and personnel. Appendices include expenditures required to implement Phase I recommendations; an annotated list of materials recommended for inclusion in the firm library in the area of environment and related engineering fields; a selected list of data bases; a manual of procedures for acquisition, processing, and utilization of library materials; and photocopies of several pages from the Library of Congress subject heading list with a discussion of advantages of its use. (Author/MBR)

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ESPEY, HUSTON & ASSOCIATES TECHNICAL LIBRARY

A PROPOSAL

by

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Graduate School of Library Science

University of Texas at Austin

May 3, 1978

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

IR006298

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INTRODUCTION

A major consideration in proposing a library or information service for Espey, Huston & Assoc. is the role that information plays in the accomplishment of the company's mission, and the types of information needed in this connection. Because Espey, Huston is involved in environmental and engineering consulting, there are several types of information which are needed by the staff members as they perform the various functions related to consulting. The professional staff at Espey, Huston largely possess advanced degrees in their respective fields; thus, there is little need for basic or fundamental information in these areas, except the types of concise, tabular data which would be consulted in a handbook or manual. What is needed is information on current research being done in the field, new developments, advances in methodology and information on other studies and projects similar to those conducted by Espey, Huston.

A second type of informational need results from the requirement that Espey, Huston remain abreast of Federal, State and local laws and requirements pertaining to the environment. Constant monitoring is necessary to ensure that the staff's knowledge in this area is accurate and completely up-to-date.

Local information, including ecological, demographic, economic and legal data, is also very important in the types of studies which Espey-Huston conducts.

A final type of information, which is needed particularly by the management of Espey, Huston is information which has predictive value, to aid in planning the future directions of Espey, Huston. Information on developing trends, with factual and statistical data to support the predictions, are

necessary to enable management to make good decisions.

Where does a library or information service fit into all of this? A special library, by definition, is one which serves the special purpose of providing the information necessary for the accomplishment of the company's mission. A special library for Espey, Huston would thus provide the mission-oriented information needed by the Espey, Huston staff, in a conveniently located, central facility. The information would be managed in such a way as to be logically arranged, easily accessible and readily available to those needing it.

PURPOSE

The purpose of the present project has been to study the information needs of Espey,Huston & Associates, Inc. and formulate a proposal for a library or information center to meet these needs. Because Espey,Huston already has a small library facility, I have deviated from the normal pattern of the project somewhat, focusing first on the problems of the existing facility and then considering the possibilities for expansion and development of library service beyond the scope of the present facility. The resulting proposal is therefore of a two-phase nature, phase one encompassing primarily the procedural changes needed to improve the present library service and phase two being a proposal for an expanded information service, with the additional materials, space and staff needed to carry out the objectives of the proposed service.

It seems that my study has come at an exciting time; Espey,Huston is still growing rapidly and I have been told that a new facility for the company is being planned. With this growth and expansion of the company in mind, I have attempted to propose procedures which will not only work in the present, but which will be flexible and capable of expansion in the future; to remain responsive to the changing needs of the professional and technical staff of Espey,Huston. Thus, Phase II of the project is in reality a logical extension of Phase I; the procedures set up under Phase I can continue to be used when Phase II is implemented.

PHASE I: CURRENT PROBLEMS

The existing library facility at Espey,Huston seems to have developed in response to two major needs: (1) the need for a central depository for some of the company's informational materials, and (2) the need for a central ordering point for informational materials, particularly NTIS reports. Other functions generally performed by special libraries, such as providing current awareness service and the providing of access to all informational materials in the company, are not well-developed at this point. The reason for this is that as long as the company remained relatively small, informal means of accomplishing these ends were satisfactory. Due to the rapid growth of Espey, Huston, however, a critical point has now been reached. It is generally agreed among those I spoke with that the informal information systems which worked before are no longer adequate. In order to deal effectively with increases in the sheer quantity of information, as well as the increasing diversity of subject matter of interest to Espey,Huston personnel, and to avoid unnecessary duplication of efforts and materials, more sophisticated methods of handling information are needed. It is to this group of problems that I have addressed myself in the first part of the project and which the Phase I recommendations are designed to alleviate.

In speaking with several members of the staff at Espey,Huston, I have been able to identify four major informational problem areas which need immediate attention. These four areas, which I will discuss and explain more fully below are:

1. Access to materials
2. Need for current-awareness information
3. Lack of adequate space in library
4. General procedural problems in library

1. ACCESS TO MATERIALS

Locational Access

The problem of providing adequate access to the informational materials available at Espey, Huston is the most serious problem facing the library at present. The most obvious consequence of inadequate knowledge in this area is unnecessary duplication of materials which are already available, but which the person currently in need of the material has no way of knowing. Thus the item may be purchased a second time, with the consequent unnecessary expenditure of funds and time. To avoid this duplication of effort and waste of funds, I propose the following:

A. Inventory

In order to begin to provide access to all informational materials at Espey, Huston, I propose that an inventory be made of the books, reports and documents which have been purchased in the past but for which no records have been kept. For this purpose, it would not be necessary to move any of the items to the library; indeed, it is part of the goal of a special library to insure that informational materials remain where they are most needed and where they will be most used; i.e., in people's offices, laboratories, etc.

B. Circulation Procedures

In order to provide a record of the whereabouts of informational materials currently being acquired by the Espey, Huston & Assoc. Technical Library, it is recommended that a permanent check-out system , as outlined in Appendix E, be maintained by the library. The records kept in such a system would provide the needed access to the location of materials.

Subject Access

A second component of the problem of accessing materials in the library is the need for subject access. Materials which have not been indexed or somehow arranged by subject content are easily overlooked if the searcher is not already aware of their existence. This can lead to loss of important information as well as unnecessary expenditures of time and effort. As solutions to this part of the problem of access, I propose the following:

A. Adoption of Library of Congress Classification System

Because of the highly technical and specialized nature of the materials acquired by the Espey,Huston Technical Library, a classification system of sufficient depth is necessary to provide a meaningful and useful arrangement of these materials. Another equally important consideration, however, is the breadth of subject areas which are of interest to Espey,Huston, and the ever-increasing and always changing mix of these interests. For this reason, highly specialized classification systems, which exist for some of the areas of concern to Espey,Huston, would not provide the wide-ranging subject coverage or flexibility needed to remain useful to the Espey,Huston Technical Library. The Library of Congress Classification System, on the other hand, developed by the Library of Congress which collects research materials in almost all subject areas, provides both the needed depth as well as the broad coverage and flexibility necessary to be useful to Espey,Huston in the long run.

Other advantages of Library of Congress Classification are its wide use among other special and research libraries, which implies that not only will the Espey,Huston Library be in the mainstream as regards classification, and capable of easily exchanging and using such aids as classified lists from other libraries, but also that Espey,Huston can benefit from the innovations

OUTLINE OF MAIN CLASSES OF LIBRARY OF CONGRESS CLASSIFICATION

A	General works
B	Philosophy. Psychology. Religion
C	Auxiliary sciences of history
D	History: General and Old World
E-F	History: America
G	Geography. Anthropology. Recreation
H	Social Sciences
J	Political science
K	Law
L	Education
M	Music. Books on music
N	Fine arts
P	Language and literature
Q	Science
R	Medicine
S	Agriculture
T	Technology
U	Military science
V	Naval science
Z	Bibliography. Library science

in classification which are developed elsewhere.

A further advantage of the Library of Congress Classification System is the availability of Library of Congress cataloging information for most commercially published books in the U.S. as well as a large number of foreign books and U.S. government publications. This is explained in further depth in Appendix G, as is the process of ordering Library of Congress catalog cards. Suffice it to say here that much cataloging which would ordinarily be done in libraries across the country in the past is now simply obtained through the shared cataloging program of the Library of Congress.

B. Adoption of Library of Congress Subject Headings

In addition to the subject access provided by classified arrangement of informational materials, the use of subject headings in the card (or book or whatever) catalog of the library provide additional access to more of the content of the item. Books and other documents commonly deal with more than a single subject; subject cataloging is the means of indicating these additional subject.

To provide this multi-dimensional approach, I recommend that all items added to the Espey, Huston Technical Library be assigned subject headings taken from the Library of Congress Subject Headings, 8th edition. The advantages of the Library of Congress Subject Headings are much the same as the advantages cited for the use of the Library of Congress Classification System: breadth of subject coverage as well as depth; wide use by other libraries; and availability of shared cataloging information for books and other materials from the Library of Congress.

In cases where the Library of Congress Subject Headings do not provide adequate coverage or depth, it is suggested that the following three lists be used to supplement the main list:

ENERGY MICROTHESAURUS: A HIERARCHICAL LIST OF INDEXING TERMS USED BY NTIS. Springfield, VA: NTIS, 1976

ENVIRONMENTAL MICROTHESAURUS: A HIERARCHICAL LIST OF INDEXING TERMS USED BY NTIS. Springfield, VA: NTIS, 1977.

THESAURUS OF WATER RESOURCES TERMS: A COLLECTION OF WATER RESOURCES AND RELATED TERMS FOR USE IN INDEXING TECHNICAL INFORMATION. U.S. Bureau of Reclamation, Washington, D.C.: GPO, 1971

The above lists should be particularly useful in updating the Library of Congress Subject Headings, which are somewhat slower to be updated than other sources, such as indexing sources. It should be noted here that for NTIS technical reports acquired by the library, the descriptors provided in the documents themselves will continue to be assigned, rather than attempting to generate new Library of Congress headings. For this purpose the above lists should prove very helpful also.

2. NEED FOR CURRENT AWARENESS INFORMATION

A problem of professionals in all fields is the need to keep up-to-date and aware of new research and publications in their fields as well as recent developments in related or broader fields. To help the professionals at Espey Huston in accomplishing these goals, I recommend:

A. Current Contents and Review Journals

Two types of publications are available which provide the type of current awareness needed by researchers and professional scientists. One is a service which provides tables of contents of major journals in a broad field on a weekly basis. By scanning this publication, the professional can locate articles of interest in a reasonably efficient manner.

The other type of publication which is useful in this regard in a somewhat different way is the annual review. Annual reviews provide in-

depth summaries of the recent advances in given fields. A list of suggested titles of current awareness and review journals for inclusion in the Espey,Huston Technical Library is included in Appendix B.

Another method of finding out about new publications which I would like to mention here is receiving of publishers' notices. Although I have not made this part of the formal proposals and recommendations, it is a very good idea for the librarian to ensure that the company's library is on the mailing lists of the major publishers of the type of books in which the company is interested.

B. Library Announcement

It is also important that the professionals at Espey, Huston remain aware of the newly-acquired materials in the library. It is recommended that a selected list of these materials be prepared on a regular basis and distributed to the Espey,Huston staff. A method of preparing the list is suggested in Appendix E, Manual of Procedures.

C. Loose-Leaf Environmental Law Services

One final area in which up-to-date information is of extreme importance to Espey,Huston is that of Federal, State and Local laws and regulations. In addition to maintaining subscriptions to the Federal Register, Code of Federal Regulations, and the Texas Register, I strongly urge consideration of one or more of the various loose-leaf services which cover environmental law. See Appendix B, under Special Services for more detailed information.

3. LACK OF ADEQUATE SPACE IN LIBRARY

To alleviate the crowded conditions in the present library, I suggest

the following:

A. Weeding of the Collection

The collection of materials on the library's shelves should be carefully and selectively weeded; this should be done by Sharon with the advice and supervision of either the senior project managers or the executive management or both. A suggested method is the compilation of a list of materials to be removed; this list would be sent to the senior project managers and/or the executive vice president for final approval. Items which are removed may be stored elsewhere or discarded completely, depending on the nature of the materials and potential usefulness at a future date.

B. More Use of Microfiche

Because a new, more sophisticated microfiche reader will soon be available at Espey,Huston, I recommend that, whenever possible, NTIS reports and other documents be purchased in microfiche. In addition to saving space, the purchase of microfiche also saves money in most cases, because the microfiche is less expensive than the printed copy.

4. GENERAL PROCEDURAL PROBLEMS IN LIBRARY

This final area is a miscellaneous category I have chosen to include all recommendations designed to make the general procedures already performed by the library somewhat more efficient.

The procedures mentioned here are outlined in greater depth in the Manual of Procedures, Appendix E. The changes I am recommending fall into the areas of acquisition, processing and circulation; they are briefly as follow:

Acquisitions

A. Use of a standard request form which can be filled out by the person initiating the request, to facilitate ordering of books, documents and technical reports

B. Use of a 5-part order form for the ordering of books; this will provide a record of materials ordered and work sheets to be used later in the processing of the book

C. Ordering of books through J.A. Majors, the scientific and technical book dealer for the state of Texas. This should speed the receipt of books as well as simplifying the invoicing process.

Processing

Changes in the cataloging of books and documents have been mentioned in connection with the recommendations to adopt the Library of Congress Classification System and Subject Headings. More detailed procedures are outlined in the Procedures Manual.

Regarding periodicals, because I anticipate that the number of subscriptions will continue to increase, I recommend that a system for periodicals check-in be started. The system is outlined in the Manual of Procedures.

Circulation

The recommendation that a permanent check-out file be maintained was mentioned earlier. The rationale behind this concept is that, except for some reference materials and access tools such as indexing/abstract services, and other updated services, the library does not need to have all information

materials within its confines; on the contrary, the library requires only a record of who has the materials, to avoid duplication and facilitate quick location when needed.

SUMMARY OF PHASE I

To summarize the recommendations made in the preceding section, they are as follow:

(1) An inventory be taken of informational materials already at Espey, Huston

(2) Permanent check-out records be maintained for all informational materials

(3) Adoption of Library of Congress Classification System for books and documents

(4) Adoption of Library of Congress Subject Headings

(5) Addition of subscriptions to the following to provide current awareness information:

Current Contents Publications
Review Journals
Loose-leaf services on environmental law

(6) Preparation on a regular basis of a list of new acquisitions by the library

(7) Weeding of the present collection of books, etc., within the library

(8) Increased use of microfiche

(9) Changing of acquisitions and processing procedures as outlined in Appendix E.

PHASE I: CONCLUSION

The foregoing recommendations are suggested as ways to improve the efficiency and effectiveness of the present Espey, Huston Library; these recommendations have been made in response to specific problems which have been identified by users of the library and should be put into effect as soon as possible.

Although the changes recommended here are primarily of a procedural nature, a certain minimum of materials and staff will be required to put them into effect. To carry out the suggestions, I therefore recommend the following: (1) that the library continue to employ a full-time equivalent person for the purpose of continuing the day-to-day operations of the library as well as implementing the recommended changes; (2) that the library obtain the materials outlined in Appendix A in connection with the recommended procedural changes.

The inventory project will require the largest expenditure of staff time. For this reason, I suggest that additional temporary staff be employed to assist in completing the inventory. Because library science students are always eager for library experience and because they should be familiar with the procedures involved, I would recommend contacting Mr. E.B. Jackson at the U.T. Graduate School of Library Science; he could probably find a student or students who would be willing to work for a week or two on such a project.

PHASE II: FUTURE EXPANSION OF LIBRARY SERVICE

Before presenting the recommendations which comprise Phase II of my proposal, I would like to discuss why a Phase II is necessary at all. The procedures I recommended as part of Phase I are designed to be flexible and responsive to changes in the direction of Espey,Huston & Associates. Why not simply adopt these measures and just leave it at that?

There are several reasons why this should not be done. First, as Espey,Huston continues to grow and develop, its informational needs will also grow. Clearly, the present library facility is inadequate even now; there is no room for growth or expansion and no flexibility or adaptability in the design of the room. Second, with continued growth, the increased demands put upon the professional staff at Espey, Huston, combined with the increasing complexity of the company's information needs strongly suggests the need for even more efficient, centralized information management within Espey,Huston. Third, the necessity that the library remain responsive to changing needs of the staff requires that the library be run by an information specialist, who can maintain an awareness of the needs of all staff members for information, as well as being aware of innovations in the information field itself. Information is an essential but expensive commodity - it costs time and effort of those who seek it; only when it is properly managed can it provide the maximum return on the time and effort invested.

The first step in designing an information center is to clearly define the purpose of such a center. The goal of a special library is, by definition, to provide the information needed for the accomplishment of the company's mission. It is only from this mission-oriented viewpoint that a meaningful set of objectives can be derived. It is thus with the company mission of Espey,Huston & Associates, which I perceive to be providing the best consulting services possible to all clients at competitive prices, that I present the following proposed charter for the Espey,Huston Technical Library.

PROPOSED CHARTER FOR ESPEY,HUSTON & ASSOC. TECHNICAL LIBRARY

It is proposed that the library or information center be designed to perform the following functions:

1. To act as a central depository for informational materials at Espey Huston
2. To act as the central ordering point for all Espey,Huston personnel requesting material in any form
3. To maintain an up-to-date record of Espey,Huston's current holdings of books, periodicals, documents and other forms of information
4. To assist Espey,Huston personnel in remaining aware of current developments and recent publications within their fields of specialization and related fields
5. To assist in the conducting of literature reviews, as well as providing other information needed for specific projects
6. To act as an archive for Espey,Huston technical reports
7. To provide the means of keeping Espey,Huston personnel aware of the library's new acquisitions
8. To provide the means and assistance to personnel in utilization of library materials
9. To develop and maintain through frequent contact with senior project managers and others, an awareness of future planning and anticipated new directions of the company, in order to anticipate future information needs

In order to carry out the functions presented in the Charter, certain resources are required:

(1) A collection of informational materials

(2) A place to house and use these materials

(3) Equipment to facilitate use and storage of materials

(4) Staff

The following sections of the proposal are devoted to the resources which are included in the above categories. Numbers (2) and (3) will be discussed together because of the interrelationships which exist between them. A final section on budget will include costs of setting up the expanded library service and a proposed annual budget.

1. THE COLLECTION AND ITS UTILIZATION

In developing a collection of informational materials for the Espey, Huston Technical Library, the availability of many of the needed materials at various other libraries in the Austin area is a factor which must be weighed against the advantages of having the materials conveniently located in-house. Items of the following types, which have high reference value, need to be consulted frequently, and which need to be available on short notice, should be acquired for the library:

(1) Reference books, including directories, handbooks, manuals, dictionaries and thesauri, statistical materials, and treatises of specific subject interest

(2) Bibliographic Aids, especially in the subject areas of particular interest to Espey, Huston

(3) Indexing and Abstracting Services

(4) Journals

(5) Review Journals and Current Awareness Services

As a guide to the selection of these types of materials, I have compiled "Appendix B: Selected List of Materials." This list is meant to be representative rather than exhaustive, and I have therefore also included references to the sources I used in compiling the list as a further aid to future searches.

1A. DATA BASES

For the type of fast yet comprehensive access to information that is needed for project-related literature searches, the capabilities inherent in computerized searching of machine-readable data bases provide an ideal method. I strongly recommend that Espey, Huston & Assoc. explore this possibility.

The three leading data base vendors are Lockheed, SDC and BRS. (Full names and addresses are given in Appendix C.) Each vendor has a list of data bases which are available through their respective systems; there is a certain amount of overlap, but enough difference to make them competitive. For all three systems, the basic fees involved are:

(1) A one-time training session fee

(2) A per-hour on-line searching fee (usually quite expensive, but the better the search is prepared before going on-line, the less computer time is actually used.)

(3) Off-line printing charges (most printing is done off-line for a minimal fee)

(4) Communications lines charges (this fee varies, but can be minimized through the use of time-sharing systems which are available)

In other words, once someone in the company has been trained, the only

costs are those incurred when an actual search is made.

To give you an indication of the scope of coverage by the three vendors, in areas of interest to Espey, Huston, I have compiled a partial listing of data bases; see Appendix C.

2. SPACE PLANNING AND EQUIPMENT

In order to house the reference materials and periodicals, as well as the growing number of technical reports in the library's collection, an expanded library facility is needed. A new facility should also be capable of supporting more sophisticated utilization of materials and should be designed with the potential for growth. It is generally accepted that 5 to 10 years is the useful lifespan for scientific and technical literature; thus, a complete turnover in materials should theoretically take place in that period of time. Of course, this is not the case in reality, but it does indicate that the library can offset growth somewhat through judicious weeding of older materials. The continuing "information explosion" however, implies that an increased amount of information is available as time passes, and the removal of older materials can never quite provide enough space for the ever-increasing amounts of newer materials. Room for growth must therefore be considered in planning.

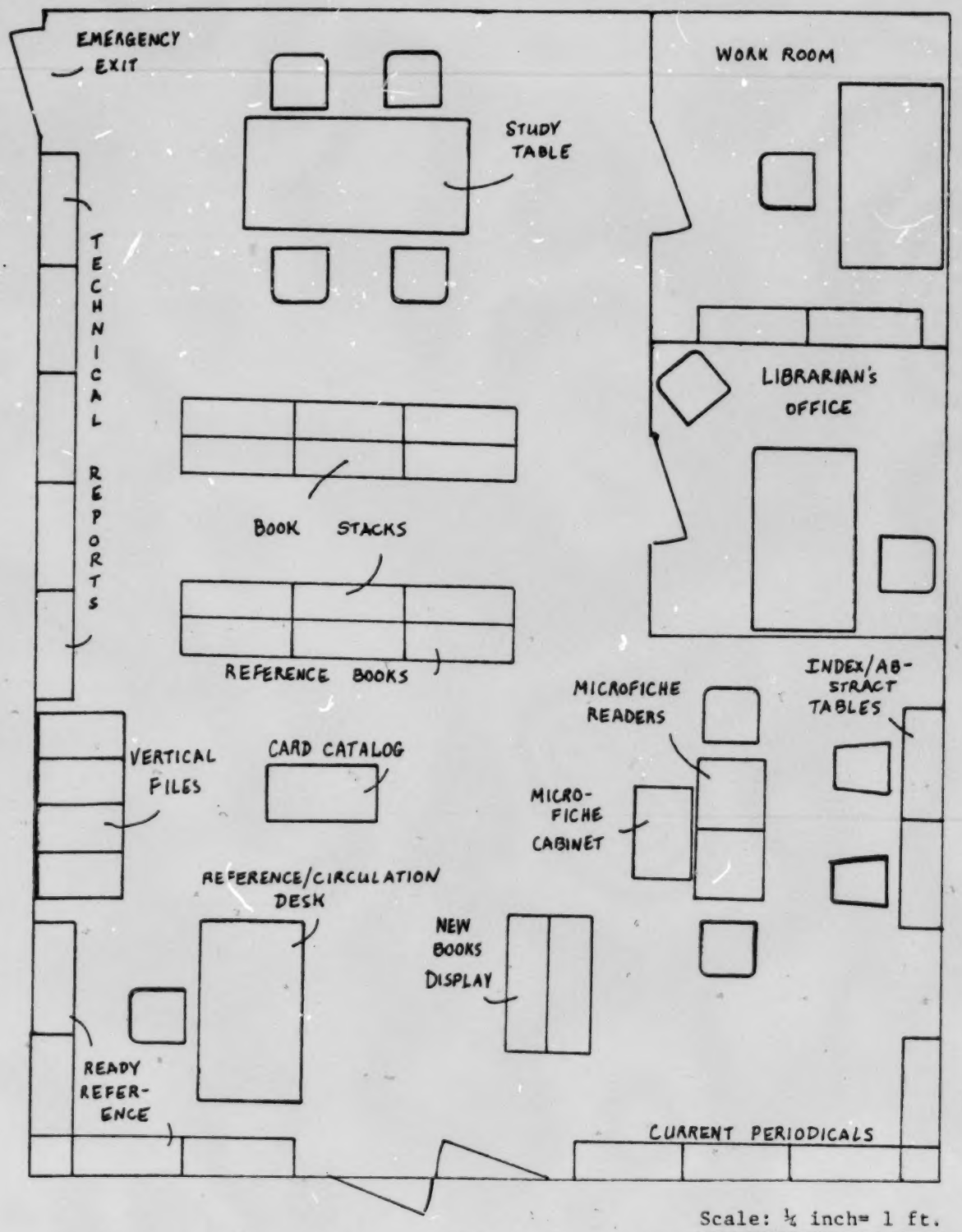
The floorplan I have designed takes these factors into account. Also taken into account are the various recommended standards for space planning which are prescribed in the design of library facilities. These figures have been taken from various sources in the library literature. For your information I have included a list of these figures in Appendix E.

The equipment and furniture included in the floorplan have all been selected to best accomplish the objectives of the library. A few words of explanation about some of the items included should be helpful at this point.

Book Display: This will facilitate display of new materials so that they may be examined by the professional and technical staff of Espey,Huston

Microfiche Readers/Cabinet: This reflects my concern that Espey Huston continue to acquire and use microfiche whenever possible, due to its economical price and the relatively small storage space required.

Study Table: This is included for the use of materials within the library. Many sources in the literature recommend that the seating capacity of the library be equal to 10% of the total staff. I consider this unnecessary for Espey,Huston however, and have recommended a lower figure. The foremost reason for this is the number of materials which are and will continue to be kept and used in people's offices and in the areas where projects are being worked on. If this is the case, however, I strongly suggest that the library be situated in a central location among the staff offices, in order that materials in the library can be easily taken to and from places where they are needed.



Scale: ½ inch= 1 ft.

Total Area = 825 sq. ft.

25

PROPOSED FLOORPLAN FOR

ESPEY, HUSTON & ASSOCIATES TECHNICAL LIBRARY

3. STAFF

In order to achieve maximum usefulness of the library, I recommend that a full-time person be employed to ensure that the library can be kept open all hours when it is needed. I strongly recommend that a professional librarian be employed for reasons stated in the introductory section of Phase II of the proposal. A professional librarian can continue to develop and implement sophisticated information management systems, to constantly improve library service. A professional librarian can also plan and respond to new information needs, based upon knowledge of the fields of information and library science, as well as an understanding of the goals and objectives of Espey, Huston.

I also suggest that a part-time clerical assistant eventually be employed to help with the various phases of the acquisitions and processing functions.

With regard to the librarian that I recommend be hired, I would like to suggest that Espey, Huston seek someone having the M.L.S. degree from an accredited graduate library program as well as appropriate subject background, including library school courses in science bibliography and government documents and perhaps an undergraduate degree in one of the sciences.

4. BUDGET

The following budgets are suggested to implement Phase II of this proposal. The Start-up Budget covers cost of all equipment, materials, supplies, and the personnel to start the library and operate it for a full year. The suggested Annual Budget is the minimum budget required to maintain the same level of service for the following year.

START-UP BUDGET

Phase I costs	$644.95
Phase II costs	
Equipment and furniture	$5,281.40
Books	$1,100.00
Periodicals	$400.00
Abstract/Indexes	$650.00
Loose-leaf service	$420.00
Computer training session	$150.00
Supplies	$130.00
Staff (1 professional librarian)	$12,500.00
TOTAL COSTS	$21,276.35

SUGGESTED ANNUAL BUDGET

Equipment	$150.00
Books	$600.00
Periodicals	$450.00
Abstract/Indexes	$800.00
Loose-leaf service	$420.00
Technical Reports	$1,500.00
Computer time	$2,500.00
Supplies	$130.00
Salaries	$12,500.00
TOTAL ANNUAL BUDGET	$19,050.00

SUMMARY OF PHASE II

In Phase II of this proposal, I have presented recommendations for the future expansion of library services at Espey, Huston. The specific recommendations made are:

(1) Proposed Charter for Espey, Huston Technical Library

It is recommended that the proposed charter be adopted, as the basis for deriving specific goals and objectives for the library.

(2) Collection & Its Utilization

It is recommended that a certain minimum of reference materials of the following forms be acquired for the library: (a) Reference books (b) Bibliographic aids (c) Indexing/abstract services (d) Journals (e) Review journals and current awareness services

It is further recommended that Espey, Huston seriously consider the use of computerized data bases for quick, comprehensive literature reviews and other searches.

(3) Space Planning and Equipment

It is recommended that Espey, Huston use the floorplan provided with this study to design a new library facility, which would be more capable of supporting more sophisticated utilization of materials as well as providing space for future growth.

The equipment and furniture chosen for inclusion in the floorplan was all chosen with better service and storage capabilities in mind. It is recommended that these or similar items be acquired for the library.

(4) Staff

It is recommended that for the Phase II portion of this library service, a professional librarian be employed on a full-time basis in order to provide maximum library service.

Following the discussion of the recommendations for Phase II, the budgets necessary for the implementation of the recommendations were presented. The total costs in each case are:

Start-up Budget: $21,276.35

Suggested Annual Budget: $19,050

PHASE II: CONCLUSION

The recommendations made in the foregoing section are offered with the sincere conviction that Espey, Huston needs a more systematic and sophisticated information management program. Such a program requires additional materials, space, equipment and staff as outlined above, however, and the addition of these items represents a fairly large investment. But I firmly believe that the expense of this investment is justified; not implementing these changes will cost the company more in the long run.

PROPOSAL SUMMARY

A proposal of a two-phase nature has been made for the improvement of library and information services at Espey, Huston and Associates, Inc. Phase I of the proposal deals with specific problems facing the present library facility at Espey, Huston. The recommendations presented in this phase of the proposal are largely procedural in nature and involve changes which would require the expenditure of approximately $644.95.

Phase II of the proposal recommends a long-term plan for future development and expansion of informational services at Espey, Huston. The recommendations made in this phase are more wide-ranging and involve the acquisition of additional materials, space, equipment and furniture, and employment of a professional librarian. The total cost of implementing Phase II are approximately $21,276.35. The suggested annual operating budget of the facility is $19,050.00.

CONCLUSION & RECOMMENDATIONS

The proposals which have been presented in this paper are the result of a study of the information needs of Espey, Huston & Associates, Inc. In attempting to ascertain the types of information needed by the professional and technical staff of Espey, Huston as well as the uses to which information is put, I was able to gain considerable insight into the problems of the existing library at Espey, Huston. For this reason, I have devoted an entire section of the papar to changes which I believe should be implemented immediately to improve the service which the present library can provide.

The remaining portion of the paper is devoted to a long-range proposal for future expansion of library/information services. This section presents many possibilities, and while it has been designed to provide a framework within which to plan and design a new library facility, it must be remembered that it is only a beginning. The information field is in a constant state of change; new possibilities need to be continually recognized and implemented in order to effectively manage the vast and ever-increasing amount of information that is being produced in the scientific and technical fields.

Some examples of possibilities which might be considered at a later date for the Espey, Huston Library include:

Automating the circulation function

Developing programs for computer-generated keyword indexes for technical reports

Switching from the card catalog to a computer-produced microform catalog

I leave you with these examples to accentuate my conclusion that ongoing awareness and concern are necessary to maintain effective management of information, and thus maximize library service.

APPENDICES

APPENDIX A.

EXPENDITURES REQUIRED FOR IMPLEMENTATION OF PHASE I RECOMMENDATIONS

1. Inventory of materials	
Temporary staff: 1 half-time equivalent person @ $3.00 per hour	$60.00
2. Permanent check-out records for materials	*
3. L.C. Classification System	
Purchase of Schedules as outlines in Appendix G	$36.75
Setting up of deposit account at Library of Congress	$75.00
4. L.C. Subject Headings	
Purchase of 2-vol. set of Subject Headings	$35.00
5. Addition of Subscriptions	
Current Contents: 2 sections @ $135 each	$270.00
Review Journals: 5 subscriptions @ $15.00 each	$75.00
6. Preparation of Library Announcement	*
7. Weeding of the present collection	*
8. Increased use of microfiche	**
9. Changes in Acquisitions and Processing Procedures	
Preparation of special request forms	*
Five-Part order forms (Gaylord: 1000 imprinted)	$39.95
Periodicals visible file (Highsmith 50 pocket folder)	$10.45
Cards for periodicals visible file (100 6"X4")	$2.30
Card stock for Xeroxing catalog cards (Perforated)	$35.50
Anglo-American Cataloging Rules	$5.00
TOTAL COST OF IMPLEMENTING PHASE I RECOMMENDATIONS	$644.95

* Items which can be implemented with materials on hand

** Will actually result in net saving

Appendix A.
Expenditures: Phase I

It should be noted that the cost of the loose-leaf services on environmental law which were recommended have been omitted from the preceding list of expenditures. The reason for this is that there is a great difference in the costs of the various services available. These are as follow:

Environmental Law Reporter	$250.00
Environment Regulation Handbook	$95.00
Environment Reporter	$420.00

Unfortunately, the last cited item, The Environment Reporter, published by Bureau of National Affairs, is by far the best of the possibilities. Because of the high price, I would recommend subscribing on a trial basis. To find out more about the service and the conditions of the trial subscription, contact:

Timothy Stokes, District Representative
12005 Greyrock Lane
Austin, TX 78750 Ph. 454-7331

For further information about each of the services and what they cover, see Appendix B. Selected List of Materials. Special Services.

APPENDIX B.

SELECTED LIST OF MATERIALS

The following selected list of publications has been compiled to aid in the development of a reference collection for the Espey Huston & Assoc. Technical Library. Items have been included on the following bases: 1) relevance to the mission of Espey-Huston; 2) quality of content of the material; and 3) currency of the information presented. Prices and annotations have been provided whenever possible.

The list includes the following categories of materials: Reference Books, Bibliographic Aids; Indexes and Abstracting Services; Journals; Review Journals and Current Awareness Services; and Special Services. Although computerized data bases are, or soon will be, considered part of the main stream of library materials, I have decided to include them in a special section, which follows this list. (See Appendix C.)

Many of the items included in this list are expensive; for their actual usefulness must be weighed against cost, always keeping in mind their availability at other relatively easily accessible library collections in the Austin area. The items I consider most important and which warrant inclusion in the Espey Huston Technical Library regardless of price are designated by (*).

The list is not intended to be exhaustive. This is particularly true of the list of journals and review journals. It represents a cross-section of titles in the areas of greatest interest to Espey-Huston & Assoc.

Following the body of the list itself, I have included a list of the sources I found most useful in compiling the list. Some of these, particularly the specialized bibliographies, have been included in the list as items which should be purchased for the Espey Huston Technical Library. Others (as indicated) need not be added to the library's collection, but should be consulted periodically to aid in the identification and acquisition of newly published materials.

Appendix B.
Selected List of Materials

I. REFERENCE BOOKS

Arbuckle, et.al. Edited by Richard A. Young. ENVIRONMENTAL LAW HANDBOOK. Bethesda, MD: Government Institutes, 1975.

Reference source of federal regulations and standards concerning sanitary engineering and the environment.

*Bolz, Ray E. and George L. Tuve. CRC HANDBOOK OF TABLES FOR APPLIED ENGINEERING SCIENCE. 2d. ed. Cleveland: CRC Press, 1973. (39.95)

As other CRC handbooks, this is compre ensive. Subjects range the entire field of engineering, including energy engineering and transport, environmental and bioengineering, environmental protection and human safety. Appendix lists engineering organizations and publishers.

Bond, Richard G. and Conrad P. Straub, eds. HANDBOOK OF ENVIRONMENTAL CONTROL. Cleveland: CRC Press, 1972-78.

Includes the following:
Vol. 1 Air Pollution, 1972 (41.95)
Vol. 2 Solid Waste, 1972 (41.95)
Vol. 3 Water Supply and Treatment, 1973 (47.95)
Vol. 4 Waste Water Treatment and Disposal, 1973 (49.95)
Series Index, 1978 (34.95)
Designed primarily for the specialist, these volumes contain searching analyses of the several categories of pollutants.

*Burchell, Robert W. and David Lisokin. ENVIRONMENTAL IMPACT HANDBOOK. New Brunswick, N.J.: Center for Urban Policy Research, 1975. 200 p. (8.95)

The first comprehensive guide to the environmental impact statement, including the most recent changes in federal and state guidelines. Also includes a variety of resource materials: annotated bibliography of sources, organizations.

*Cheremisinoff, Paul N. and R.A. Young, eds. POLLUTION ENGINEERING PRACTICE HANDBOOK. AnnArbor, MI: Ann Arbor Science, 1975. (32.50)

A comprehensive guide intended to help environmental engineers in detection, measurement, quality testing and quality estimation of pollution including water and air pollution. Uses case history method, and is recommended for a wide audience including consulting engineers.

*Cheremisinoff, Paul N. and Angelo Morresi. ENVIRONMENTAL ASSESSMENT & IMPACT STATEMENT HANDBOOK. Ann Arbor, MI: Ann Arbor Science, 1977. (29.50)

Provides thorough and practical guidelines to the legal requirements of impact analysis, land use and transportation impacts, as well as the methods of organizing and presenting the EIS. Applications to

Appendix B.
Selected List of Materials.

various aspects of pollution, including air quality and water resources.

*Ciaccio, Leonard L. ed. WATER AND WATER POLLUTION HANDBOOK. Marcel Dekker, 1971. 4 v. (41.50 per volume.)

Four volume treatise on entire range of water pollution problems. First part covers environmental systems, including chemical, physical and biological characteristics of water resources, estuaries, irrigation and soil waters; water purification.
Part 2 covers the various techniques needed in analyzing water.
Intended for those with a vested interest in water environment, including civil and consulting engineers.

Cross, Frank L., Jr. HANDBOOK ON MARINE ENVIRONMENTAL ENGINEERING. Westport, CONN: Technomic, 1974. (35.00)

*Cross, Frank L., Jr. WATER POLLUTION MONITORING. Westport, Conn: Technomic, 1976. (10.00)

Danielson, J.A. AIR POLLUTION ENGINEERING MANUAL. 2d. ed. Research Triangle Park, NC: EPA, 1973.

A practical guide based on working experience of professionals in the field.

*Durrenberger, Robert W., comp. DICTIONARY OF THE ENVIRONMENTAL SCIENCES. National Press Books, 1973. (9.95)

*ECOTECHNICS: AN INTERNATIONAL ECOLOGY DIRECTORY. New York, Farichild Books, 1977. (65.00)

Covers 900 product categories produced by over 8,000 firms in the U.S., Canada and Western Europe, Japan and Eastern Europe. Gives name, address and telex numbers of these firms, which are producers of products and services designed for lessening or prevention of air, water, noise and solid waste pollution. Also includes information on laws and environmental liability insurance.

*ENERGY MICROTHESAURUS: A HIERARCHICAL LIST OF INDEXING TERMS USED BY NTIS. Springfield, VA: NTIS, 1976.

Contains over 900 terms which express energy concepts in areas such as fuel sources, energy demand, conservation, electric power generation, etc.

ENERGY TECHNOLOGY HANDBOOK. Ed. by Douglas Maxwell Considine. New York: McGraw-Hill, 1977. (49.50)

Consists of practical suggestions from 130 engineers on the technological aspects of conversion of coal, gas, petroleum, chemical fuels, nuclear, solar, geothermal energy and hydroelectric power.

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Selected List of Materials

*ENVIRONMENT USA: A GUIDE TO AGENCIES, PEOPLE, AND RESOURCES. Onyx Group, comp. and ed. New York: Bowker, 1974. (16.95)

A comprehensive handbook for researchers on environmental matters. Lists of agencies, academic and professional organizations, books, articles, etc., arranged by categories.

ENVIRONMENTAL PROTECTION DIRECTORY. 2d. ed. Chicago: Marquis Who's Who, 1975. (44.50)

A comprehensive guide to environmental organizations in the U.S. and Canada.

*ENVIRONMENTAL/SOCIOECONOMIC DATA SOURCES. Washington: U.S. GPO, 1976. (1.50)

Handbook which provides information enabling environmental engineers responsible for preparing environmental impact statements to locate the right federal publication which contains local data as well as other potential federal and local sources. Classified by broad topics such as demographic, economic, housing and government and public finance.

Franks, Felix, ed. WATER IN DISPERSE SYSTEMS: A COMPREHENSIVE TREATISE. New York: Plenum, 1975. 5 vols. (37.50 per vol.)

*Giefer, Gerald J. et al. WATER PUBLICATIONS OF STATE AGENCIES: A BIBLIOGRAPHY ON WATER RESOURCES AND THEIR MANAGEMENT, First suppl, 1971-74. Water Information Center, Huntington, NY.

Geraghty, James W. and others. WATER ATLAS OF THE UNITED STATES. 3d. ed. Port Washington, NY: Water Information Center, 1973.

A good visual guide to the water situation in the U.S. Data cover all aspects of precipitation, surface water and ground water, plus materials on water pollution, water quality, water conservation and water law.

Gilpin, Alan. DICTIONARY OF ENVIRONMENTAL TERMS. London: Routledge and Kegan, 1976. (14.25/pap 7.90)

GLOSSARY: WATER AND WASTEWATER CONTROL ENGINEERING. Prepared by the Joint Ed. Board, American Public Health Assn, et al. N.Y.: American Public Health Assn., 1969.

Technical terms for a wide range of professional people.

*GUIDELINES FOR PREPARATION OF ENVIRONMENTAL STATEMENTS FOR REVIEWING AND COMMENTING ON ENVIRONMENTAL STATEMENTS PREPARED BY OTHER FEDERAL AGENCIES. Washington, EPA, 1973.

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Selected List of Materials

Herman, Stewart and James Cameron. ENERGY FUTURES: INDUSTRY AND THE NEW TECHNOLOGIES. Boston: Ballinger Pub., 1977. (45.00)

This work contains profiles of over 200 R&D projects in 141 U.S. corporations in seventeen new technology areas, including coal gasification, coal liquefaction, geothermal steam, extraction of oil from shale and solar heating and cooling.

Kinovi, B.Z. MANUAL OF SURFACE DRAINAGE ENGINEERING. NY: American Elsevier, 1970. (30.95)

*Liptak, Bela G. ed. ENVIRONMENTAL ENGINEER'S HANDBOOK. Radnor, PA: Chilton, 1974-75.

Includes:
Vol. 1 Water pollution (39.00)
Vol. 2 Air pollution (35.00)
Vol. 3 Land pollution (35.00)
All sections in this comprehensive handbook are written by subject specialists and include bibliographies and much material presented in tabular form.

MCGRAW-HILL ENCYCLOPEDIA OF ENERGY. New York, McGraw-Hill, 1976.

Articles presenting a comprehensive overview of today's energy perspective and technology. Covers all areas of energy, such as coal mining, nuclear power, ecology, electric power generation and others.

*MCGRAW-HILL ENCYCLOPEDIA OF ENVIRONMENTAL SCIENCE. McGraw-Hill, 1974. (24.50)

Authorative and easy-to-use. Probably the best general work on the environment available.

McEvoy, James, ed. HANDBOOK OF ENVIRONMENTAL PLANNING: THE SOCIAL CONSEQUENCES OF ENVIRONMENTAL CHANGE. NY: Wiley-Interscience, 1977. (21.95)

* Merritt, Frederick, ed. STANDARD HANDBOOK FOR CIVIL ENGINEERS. 2d. ed. NY: McGraw-Hill, 1976. (39.95)

Myers, John J. and others, eds. HANDBOOK OF OCEAN AND UNDERWATER ENGINEERING. NY: McGraw-Hill, 1969. (39.50)

Written in technical language for engineering personnel. 12 sections including such topics as oceanography, hydrodynamics, underwater instrumentation, etc.

* National Technical Information Service. ENVIRONMENTAL MICROTHESAURUS: A HIERARCHICAL LIST OF INDEXING TERMS USED BY NTIS. NTIS, 1977. (10.50)

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Selected List of Materials.

*Organization of Economic Cooperation and Development. WORLD ENERGY OUTLOOK. Washington, D.C.: OECD, 1977. (12.00)

This work analyzes the effects of alternative growth and energy policy upon energy supply and demand outlook. Trends in international energy markets are assessed as current opportunities for energy supply expansion and conservation.

Pfafflin, James and Edward N. Ziegler, ENCYCLOPEDIA OF ENVIRONMENTAL SCIENCE AND ENGINEERING. NY: Gordon & Breach, 1976. 2 vols. (180.00 set)

A convenient source of a wide range of information on environmental engineering for those who can afford it.

Predicasts, Inc. WORLD ENERGY SUPPLY AND DEMAND. Cleveland, Predicasts, 1977. (485.00)

This expensive study analyzes primary energy requirements and supplies with emphasis on the long term outlook to 1990 for over 35 countries and regions. Energy forms include coal, crude petroleum, natural gas, hydroelectricity and nuclear power sources.

*Rosen, Sherman J. MANUAL FOR ENVIRONMENTAL IMPACT EVALUATION. Englewood Cliffs, N.S.: Prentice-Hall, 1976 (13.95)

Schwartz, Mortimer D. ENVIRONMENTAL LAW. Gale Research Co., 1977 (18.00)

*THESAURUS OF WATER RESOURCES TERMS: A COLLECTION OF WATER RESOURCES AND RELATED TERMS FOR USE IN INDEXING TECHNICAL INFORMATION. U.S. Bureau of Reclamation, Washington, GPO, 1971

Todd, David Keith, ed. THE WATER ENCYCLOPEDIA: A COMPENDIUM OF USEFUL INFORMATION ON WATER RESOURCES. Port Washington, N.Y.: Water Information Center, 1970. (35.00)

Nine chapters cover climate and precipitation, hydrology, surface and ground water, water use, water quality and pollution control, water resources, management; agencies and organizations involved in the area of water resources; constants and conversion factors relating to water configurations

* U.S. Bureau of the Census. COUNTY AND CITY DATA BOOK. GPO, issued after each major group of major censuses is taken.

Comprehensive presentation of local data, for a variety of economic and social facts on counties, cities, metropolitan areas, urbanized areas and unincorporated areas of 25,000 inhabitants or more in the U.S.

* U.S. Bureau of the Census. STATISTICAL ABSTRACT OF THE UNITED STATES. GPO, annual.

The basic guide to the major statistical surveys of the federal government.

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Selected List of Materials

*U.S. Congress. Office of Technology Assessment. A REVIEW OF THE U.S. ENVIRONMENTAL PROTECTION AGENCY ENVIRONMENTAL RESEARCH. OUTLOOK, 1976-1980. Washington, D.C.: U.S. GPO, 1976.

U.S. Environmental Protection Agency. Library Systems Branch. STATE AND LOCAL ENVIRONMENTAL LIBRARIES. A DIRECTORY. 2d. ed. 1976. Washington, EPA, (4.00)

Also includes departmental libraries of university and public libraries if they specifically relate to environmental activities.

*U.S. Environmental Protection Agency. Office of Water Program Operations. INTRODUCTION TO INSTRUMENTAL ANALYSIS OF WATER POLLUTANTS. Training Manual. Washington, EPA. (6.75)

Instrumental methods most commonly used for water analysis.

U.S. Federal Energy Administration. NATIONAL ENERGY OUTLOOK. Washington, U.S. GPO, 1976- annual.

An annual series of energy forecasts through 1990 based on FEA models. Topics include prices, consumption, supply, emerging technology, imports, capital requirements and environmental aspects. Fuels such as oil, electricity, natural gas, coal, etc. are covered in the estimates.

*U.S. Geological Survey. THE NATIONAL ATLAS OF THE UNITED STATES. Washington: Geological Survey, 1970.

756 maps in categories: general, physical, historical, economic, sociocultural, administrative, mapping and charting, and the world. Physical maps are excellent and cover every domain of geoscience as pertain to the United States.

* U.S. Office of Water Resources Research. WATER RESOURCES RESEARCH CATALOG. Washington, U.S. GPO, 1966--

Describes current research on water resources problems. Includes abstracts.

van der Leeden, Fritz. GROUND WATER: A SELECTED BIBLIOGRAPHY. Port Washington, N.Y.: Water Information Center, 1974. (17.00)

Primarily for the hydrologist, 2,000+ references divided among 32 topics.

* Zilly, Robert G., ed. HANDBOOK OF ENVIRONMENTAL CIVIL ENGINEERING. NY: Van Nostrand Reinhold, 1975. (37.50)

Data primarily bears on environmental and management aspects of civil engineering. Work is arranged into 7 major sections, including quantitative engineering management and the civil engineer and the human environment.

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II. BIBLIOGRAPHIC AIDS

Burke, John Gordon and Jill S. Reddig. GUIDE TO ECOLOGY INFORMATION AND ORGANIZATIONS. New York: H.W. Wilson, 1976. (12.50)

Annotated bibliography. Sections include Indexes, Reference Books, Histories, Monographs, Government Publications, etc. Probably geared more to the non-specialist.

*Chen, Ching-Chih. SCIENTIFIC AND TECHNICAL INFORMATION SOURCES. Cambridge, MA: MIT Press, 1977. (24.95) (Also: Scarecrow, 12.50)

Annotated guide to the literature of the pure and applied sciences. Arranged by format of material, then further subdivided by topic. Includes author index and list of references. This is the most current bibliography available at this time is the fields of pure and applied science. Most materials cited published between 1970-76.

*Geifer, Gerald J. SOURCES OF INFORMATION IN WATER RESOURCES: AN ANNOTATED GUIDE TO PRINTED SOURCES. Port Washington, N.Y.: Water Information Center, 1976. (23.50)

McDonald, Rita, comp. GUIDE TO LITERATURE ON CIVIL ENGINEERING. Washington: American Society for Engineering Education, 1972.

A brief list of engineering bibliographies, indexes, abstracts, dictionaries, handbooks, etc. Not annotated.

McDonald, Rita, comp.. GUIDE TO LITERATURE ON ENVIRONMENTAL SCIENCES. Washington: American Society for Engineering Education, 1970.

*Meshenberg, Michael J. ENVIRONMENTAL PLANNING: A GUIDE TO INFORMATION SOURCES. Man and the Environment Series, 3. Detroit: Gale Research, 1976. (18.00)

An excellent selective and annotated bibliography of literature on natural processes in the environment as well as social and legal aspects of planning. Covers general environmental issues, environmental planning, impact analysis; of particular interest: PP. 157-257, "Water in the Planning Process." Includes references to specific articles.

Metz, Karen S. INFORMATION SOURCES IN POWER ENGINEERING; A GUIDE TO ENERGY RESOURCES AND TECHNOLOGY. Westport, Conn.: Greenwood Press, 1976. (11.00)

A guide to literature of power engineering describing both standard publications and information sources and systems. For engineers, librarians and management personnel.

* Mount, Ellis. GUIDE TO BASIC INFORMATION SOURCES IN ENGINEERING. New York: Wiley, Halstead Press, 1976. (11.95)

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Schildhauer, C. SOURCES OF INFORMATION ON THE ENVIRONMENT; ENGINEERING AND INDUSTRIAL APPLICATIONS; A SELECTED ANNOTATED BIBLIOGRAPHY. Cambridge, MA: MIT, Barker Engineering Library, 1972.

Sinha, Evelyn. COASTAL/ESTUARINE POLLUTION: AN ANNOTATED BIBLIOGRAPHY. La Jolla, CA: Ocean Engineering Information Service, 1970.

Contains 631 abstracts on the detection, identification, measurement and analysis of parameters of pollution and pollutants; sources of pollution; coastal and estuarine processes; effects of pollution, etc.

Tchobanoglous, G. WASTEWATER MANAGEMENT: A GUIDE TO INFORMATION SOURCES. Detroit: Gale Research, 1976. (18.00)

A selected and annotated guide to periodical articles, technical reports, and collected papers on the engineering of wastewater collection, treatment, disposal and reuse systems.

Thibeau, Charles, ed. NFEC DIRECTORY OF ENVIRONMENTAL INFORMATION SOURCES. 2d. ed. National Foundation for Environmental Control. dist. by Cahners, 1972.

Part 1 lists government agencies & trade organizations, etc. with environmental concerns. Part 2 lists information sources, including abstracting sources, directories, indexes, documents and reports, some books, films, etc.

Thomas, William A. and others. BIOLOGICAL INDICATORS OF ENVIRONMENTAL QUALITY: A BIBLIOGRAPHY OF ABSTRACTS. Ann Arbor, MI: Ann Arbor Science Publishers, 1973. (18.00)

Compilation of abstracts providing an organized summation of the major work on environmental monitoring. Intended for aquatic biologists, plant physiologists, terrestial and aquatic ecologists, etc.

van der Leeden, Fritz. GROUND WATER: A SELECTED BIBLIOGRAPHY. 2d. ed. Port Washington, N.Y.: Water Information Center, 1974. (17.00)

Guide for hydrologists with 2,000+ references in 32 topics.

Wolff, Garwood R., ed. ENVIRONMENTAL INFORMATION SOURCES HANDBOOK. New York: Monarch, 1974. (25.00)

Contains information on 2,000 organizations dealing with environmental matters.

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III. INDEXES AND ABSTRACTING SERVICES

AIR POLLUTION ABSTRACTS. Research Triangle Park, NC: Air Pollution Technical Information Center, 1970- monthly. (29.90)

Detailed abstracting service covering all phases of air pollution, management and effects. Its sources are technical reports, journals, monographs and other publications. Overlaps with Environment Index and Pollution Abstracts, but provides the only comprehensive coverage of the particular topic.

AQUATIC SCIENCES AND FISHERY ABSTRACTS. London: Information Retrieval, Ltd., 1971- monthly. (230.00)

Abstracts of articles, books, and papers in physical and chemical oceanography, limnology, aquatic biology, ecology, pollution of oceans and the effects thereof on fishes.

BIOLOGICAL ABSTRACTS. Biosciences Information Service, 1926- semimonthly. (1200.00)

Most comprehensive abstracting service available on the world's literature on biology.

Chicorel, Marietta, ed. CHICOREL INDEX TO ENVIRONMENT AND ECOLOGY. 2 vol. New York: Chicorel, 1975. v. 16 and 16A (Index Series) (60.00 each)

Approximately 10,000 books and reports alphabetically arranged under 16 broad subject categories

*EIS: KEY TO ENVIRONMENTAL IMPACT STATEMENTS. Information Resources Press, 2100 M St., N.W., Suite 316, Washington, D.C. 20037. 1977- (245.00)

A new service providing lengthy abstracts of approximately 120 EIS's per month, including both drafts and final reports in its coverage. Abstracts include: date, no. of pages, subject terms; 1. purpose or issue 2. positive impact and mitigating actions 3. negative impact 4. alternatives considered. Abstracts are arranged by broad subject topics; includes an issues specific subject index.

*THE ENERGY INDEX. New York: Environment Information Center. 1973- Annual. (60.00)

Annual series available from EIC, "one of the world's largest independent clearinghouses for energy and environmental information." This particular work provides access to the energy-related information in EIC's data base of journals, conference papers, hearings, monographs, reports, etc. For more information on EIC and the various access points available, see the photocopied pages immediately following this page.

ABOUT EIC

EIC is one of the world's largest independent clearinghouses for energy and environmental information serving more than 8,000 clients in 50 nations.

Since 1970, EIC has applied the information sciences to help manage the information overload that has accompanied the problems facing mankind in the waning of the 20th century. The EIC system monitors the pulse of the key international trade and professional organizations, governments, and corporations, and provides quick access to their information resources. Products and services include abstract journals, annual indices, directories, yearbooks, binder services, computer tapes, on-line networks, microfiche libraries and contract research. EIC operations cover the following major areas:

Document Data Banks:

EIC's data base of journal articles, conference papers, hearings, monographs, reports, special studies, statistics and books is continually updated through extensive monitoring. This information is indexed, abstracted, microfilmed, and stored for computer retrieval by EIC and is accessed through a variety of reference products and services, including: the current awareness journals, *Environment Abstracts*® and *Energy Information Abstracts*;® the annual yearbook/reference series, *Environment Index*®, *Energy Index*®, and *Land Use Planning Abstracts*; the microfiche library service, *Enviroliche*; the magnetic computer tape services, *Environmental Science Index* and *Energy Information Abstracts*, and on-line computer network services.

Laws and Regulations:

EIC's coverage of this important area includes the *Environment Regulation Handbook*, a three-binder, 1500-page reference set that organizes significant federal environmental statutes, and *Energy Regulation Update*, a reference service which provides cost-effective access to federal regulatory actions in energy. Both are updated monthly.

Films:

EIC continuously monitors private, commercial and governmental sources for new film releases. These are announced in the reference series discussed earlier, and are critically reviewed in *The Environment Film Review*.

Organizations and People:

Much important information is never published, but exists in the files of the world's top energy and environmental organizations, and in the minds of the personnel that staff them. EIC has developed a systematic form of access to this resource through its organizational data base, which profiles 3,000 federal and state agencies, professional and trade organizations, corporations, and 10,000 individuals. This information is accessible through *The Energy Directory*®, and *Energy Directory Update*, and through the NERIS (National Energy Referral and Information Systems) magnetic computer tape service.

Information Systems and Periodicals

EIC maintains up-to-date files on information systems and periodical publications in the energy and energy-related area. This file describes commercial, non-profit and governmental information centers, systems and libraries and several thousand journals, newsletters, binder services, directories and indexing and abstracting services. It is accessible through NERIS and the annual *Energy Information Locator*.

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Clients can call on EIC research services to expedite projects, including document retrieval, literature searches, special acquisitions, media monitoring, and keyword alerts (SDI).

Contract Research:

EIC systems and experience has been applied to solve information problems faced by leading research organizations: governments, trade associations and corporations. Work can range from surveys to the design and operation of internal information centers.

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Review Classifications

All documents acquired by EIC are logged into 21 review categories for quick location according to broad areas of interest

01 Air Pollution

Includes air pollution aspects of: mobile and stationary sources; gases and particulates; acid rain; odors; aquatic and marine atmospheres; thermal air pollution. For airborne trace elements and pesticides see 02 Chemical & Biological Contamination; for radiological air pollution see 14 Radiological Contamination; for weather modification aspects see 20 Weather Modification & Geophysical Change.

02 Chemical & Biological Contamination

Includes chemical and biological contamination aspects of air, land, organisms, water; plant and animal diseases; pests; agricultural chemicals; fungicides, herbicides, insecticides, rodenticides; industrial chemicals; toxic vapors, vinyl chlorides, PCB's; chemical and biological warfare; actual or potential trace element contamination: cadmium, lead, mercury, zinc; food poisoning. For marine oil spills see 12 Oceans & Estuaries; for biological contamination of drinking water see 16 Renewable Resources—Water; for freshwater pollution aspects of fertilizers, detergents, and oil spills see 19 Water Pollution.

03 Energy

Includes nontechnical aspects and general environmental impact of energy development and utilization. For specific pollution aspects see 01 Air Pollution, 02 Chemical & Biological Contamination, 09 Land Use & Misuse, 10 Noise Pollution, 12 Oceans & Estuaries, 14 Radiological Contamination, 17 Solid Waste, 19 Water Pollution, 20 Weather Modification & Geophysical Change. (For more detailed information on energy development and utilization see *Energy Information Abstracts*.)

04 Environmental Education

Includes philosophical and operational aspects of: curriculum planning and development; environmental study areas; adult and community programs.

05 Environmental Design & Urban Ecology

Includes building and nonbuilding aesthetic aspects of: landscape architecture; visual pollution: billboards, transmission lines; urban design, planning, renewal; city streets, new towns, ekistics. For rural and regional planning see 09 Land Use & Misuse.

06 Food & Drugs

Includes food supply aspects of: commercial fisheries, aquaculture and mariculture, livestock, field crops; food processing; nutritional requirements; animal feed. For pollution damage to food see 01 Air Pollution, 02 Chemical & Biological Contamination, 12 Oceans & Estuaries, 14 Radiological Contamination, 19 Water Pollution; for birth control drugs see 13 Population Planning & Control.

07 General

Includes general aspects of: U.S. pollution and conservation problems; policy, planning, and programs of U.S. federal, state, and local governments; trade and professional associations, corporations, environmental organizations. For specific environmental issues see individual categories.

08 International

Includes general aspects of: non-U.S. and international pollution and conservation problems. For food supply aspects see 06 Food & Drugs; for marine aspects see 12 Oceans & Estuaries; for population aspects see 13 Population Planning & Control; for specific environmental issues see individual categories.

09 Land Use & Misuse

Includes use and despoliation of land and wetlands: subdivisions, construction, pipeline transmission, highway and airport development, strip mining; land reclamation; open space, wilderness, scenic and historic preservation; rural and regional planning; land-based recreation. For soil pollution see 02 Chemical & Biological Contamination; for terrestrial power plant siting see 03 Energy; for offshore power plant siting see 12 Oceans & Estuaries; for seismological considerations in power plant siting see 20 Weather Modification & Geophysical Change; for aesthetic aspects see 05 Environmental Design & Urban Ecology; for resource aspects of forest and wilderness see 15 Renewable Resources—Terrestrial; for waste disposal on land see 17 Solid Waste; for transportation aspects of highways and airports see 18 Transportation; for game preserves see 21 Wildlife.

10 Noise Pollution

Includes noise levels and effects from: domestic, industrial, and transportation sources.

11 Non-Renewable Resources

Includes resource aspects of minerals. For scenic aspects see 09 Land Use & Misuse; for recycling see 17 Solid Waste.

12 Oceans & Estuaries

Includes use and abuse of marine environment; international agreements on seabed usage; technology and programs for exploitation: ocean mining, artificial structures, offshore power plant siting, marine pollution, ocean dumping, marine oil spills, sewage outfalls, thermal marine pollution; oceanography. For pollution of marine atmosphere see 01 Air Pollution; for marineborne trace elements and pesticides see 02 Chemical & Biological Contamination; for mariculture see 06 Food & Drugs; for radiological marine pollution see 14 Radiological Contamination; for freshwater pollution see 19 Water Pollution.

13 Population Planning & Control

Includes physical, psychological, and socioeconomic aspects of human population growth and control; incentives and regulations; birth control programs and techniques: contraception, sterilization, abortion. For population support aspects of food supply see 06 Food & Drugs.

14 Radiological Contamination

Includes radiation levels and effects from: atomic and electromagnetic sources; lab and mine accidents; waste disposal; fallout; nuclear fuel and reactor safety. For energy aspects of atomic reactors see 03 Energy.

15 Renewable Resources—Terrestrial

Includes renewable aspects of plants and soil: forest management; tree farms, logging, reforestation; soil conservation; botany. For soil pollution see 02 Chemical & Biological Contamination; for land use aspects see 09 Land Use & Misuse.

16 Renewable Resources—Water

Includes renewable aspects of fresh water: water supply; water resources; water purification, desalination, irrigation; biological contamination of drinking water; flood control; artificial lakes; water-based recreation. For aquaculture see 06 Food & Drugs; for marine resources see 12 Oceans & Estuaries; for pollution aspects see 19 Water Pollution.

17 Solid Waste

Includes solid waste collection, treatment, disposal: municipal and industrial refuse; sanitary landfill; compaction, composting, incineration, recycling; land disposal of liquid wastes. For air contamination aspects see 01 Air Pollution; for ocean dumping see 12 Oceans & Estuaries; for radioactive waste disposal see 14 Radiological Contamination.

18 Transportation

Includes transportation aspects of: motor vehicles and highways; aircraft and airports; railroads; ships; mass transit; pipeline transportation; new concepts: magnetic levitation, personal rapid transit. For pollution aspects see 01 Air Pollution, 10 Noise Pollution, 12 Oceans & Estuaries, 14 Radiological Contamination, 17 Solid Waste, 19 Water Pollution, 20 Weather Modification & Geophysical Change; for urban scenic aspects see 05 Environmental Design & Urban Ecology; for nonurban land use aspects see 09 Land Use & Misuse.

19 Water Pollution

Includes freshwater pollution aspects of: agricultural effluents, fertilizers, animal wastes; industrial effluents; wastewater, thermal water pollution; municipal effluents: sewage, detergents; freshwater oil spills; wastewater reuse. For pollution of aquatic atmosphere see 01 Air Pollution; for waterborne trace elements and pesticides see 02 Chemical & Biological Contamination; for marine pollution see 12 Oceans & Estuaries; for radiological water pollution see 14 Radiological Contamination; for land disposal of liquid wastes see 17 Solid Waste.

20 Weather Modification & Geophysical Change

Includes geophysical impact of use of environmental resources, unintentional and deliberate weather modification, thermal pockets, greenhouse effect, ozone depletion, geophysical warfare, earthquakes, seismological considerations in power plant siting. For ozone pollution and acid rain see 01 Air Pollution.

21 Wildlife

Includes wildlife aspects of: animal habitat, endangered species, game preserves, bird sanctuaries, predator control, ichthyology. For pollution effects on nonendangered species see 01 Air Pollution, 02 Chemical & Biological Contamination, 10 Noise Pollution, 12 Oceans & Estuaries, 14 Radiological Contamination, 19 Water Pollution; for livestock see 06 Food & Drugs.

Appendix B.
Selected List of Materials.

ENVIRONMENT ABSTRACTS. New York: Environment Information Center. 1974- Monthly. (250.00)

Abstracts for 700 general, technical and scientific publications. LIsts articles, films and books under 21 broad subject headings. Covers information relating to all aspects of environmental science. As was mentioned under ENERGY INDEX, additional information on EIC, the publisher of Environment Abstracts, can be found in the photocopied pages immediately preceding this one.

* ENVIRONMENT INDEX. New York: Environment Information Center. 1971- Monthly. (95.00)

A monthly index to the environmental literature from scientific journals, technical reports, government documents, conference proceedings, and other general scurces. As noted in the entry above, additional information on EIC, publisher of these sources is given on the photocopied pages immediately preceding this one.

ENVIRONMENTAL PERIODICALS BIBLIOGRAPHY: INDEXED ARTICLE TITLES, 1972. Santa Barbara, CA: Environmental Studies Institute, 1972- Bimonthly.

Indexes feature and review articles on environmental issues from 260 U.S. and foreign periodicals. Annual index.

OCEANIC ABSTRACTS. Louisville, KY: Data Courier, Inc. 1964- (345.00) Bimonthly

Covers biology, fisheries, geology, meteorology, oceanography, pollution, engineering materials, and other topics. Covers books, journals, papers, pamphlets, government publications and symposia.

*POLLUTION ABSTRACTS. Louisville, KY: Data Courier, Inc. 1970- Bimonthly (99.00)

Abstracts of scientific documents dealing with pollution by all known contaminants of air, land, waters, sea water, and the aural atmosphere, and the polluting effects of sewage and waste on all of these. Document retrieval service is provided for documents indexed.

*SELECTED WATER RESOURCES ABSTRACTS. U.S. Office of Water Research & Technology. Water Resources Scientific Information Office, 1968- Semimonthly. (75.00; with index 100.00)

Coverage of primary literature on such topics as water cycle, properties of water, conservation, resources, legislation, etc. Includes subject, author, organization, and accession number indexes. Very detailed and comprehensive. Materials abstracted from research reports, journal articles, etc.

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*U.S. Superintendent of Documents. MONTHLY CATALOG OF UNITED STATES PUBLICATIONS. Washington, GPO, 1895- monthly.

Basic current bibliography of U.S. government publications printed by the GPO. Does not include commissioned or contracted reports (i.e., technical reports).
Does include NOAA, USGS, Bureau of Mines, National Research Council, Bureau of Census, DOE, and many other materials accessible only here.

WATER QUALITY ABSTRACTS: A SPECIAL COMPENDIUM FROM POLLUTION ABSTRACTS, INC. LaJolla, CA: Pollution Abstracts, 1973

Beginning in 1973, all abstracts on water quality dating back to 1969 that appeared in Pollution Abstracts have been culled and presented in a more accessible format. There are no indexes, however.

* WATER RESOURCES ABSTRACTS. St. Anthony Falls Hydraulic Laboratory, Mississippi River at 3rd Avenue, Minneapolis, MN 55414. Monthly looseleaf service, Abstracts arranged in 50 categories: (10.00 for 1st category; 5.00 each for additional categories; 120.00 for all categories)

Comprehensive coverage of all phases of water resources from planning and allocation to hydrology.

*WEEKLY GOVERNMENT ABSTRACTS. Springfield, VA: NTIS. Weekly.

Weekly newsletter describing most unclassified federally funded research as it is completed.
Relevant sections:
Energy (45.00)
Environmental Pollution and Control (66.00)

It should be noted here that almost all of the abstracting services described in this section are also available on-line through various data base vendors (See Appendix C. Data Bases). Because the abstracting Services themselves are so expensive in many cases, use of the computerized data bases is a cost-effective way of accessing these files.

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Selected List of Materials.

IV. JOURNALS

AIR POLLUTION CONTROL ASSOCIATION. JOURNAL. Monthly, (35.00 to individuals, 75.00 to institutions) Air Pollution Control Association, 4400 5th Avenue, Pittsburgh, PA 15213

AQUATIC BOTANY. Elsevier North Holland, 52 Vanderbilt Avenue, New York, NY 10017

An international scientific journal dealing with applications and fundamental research on submerged, floating and emergent plants in marine and fresh water ecosystems.

AWARE: THE ENVIRONMENTAL MAGAZINE ABOUT THE ELECTRIC INDUSTRY. Monthly, (9.00) Community Performance Pubns. Inc., Suite 12, 2038 Pennsylvania Ave., Madison, WI 53704

CRC CRITICAL REVIEW IN ENVIRONMENTAL CONTROL. Quarterly. (60.00) CRC Press, 18901 Cranwood Parkway, Cleveland, OH 44128

CRWR NEWS. Quarterly. Free. University of Texas at Austin, Center for Research in Water Resources. Balcones Research Center, Austin 78757

COASTAL ZONE MANAGEMENT JOURNAL. Quarterly. (32.00) Crane, Russak & Co., Inc. 347 Madison Avenue, New York, NY 10017

ECOLOGY. Bimonthly. (25.00 to active members; 35.00 to sustaining members) Duke University Press (for Ecology Society of America), P.O. Box 6697 College Station, Durham, N.C. 27708

Technical, research articles with lengthy bibliographies.

ELECTRIC POWER STATISTICS. Monthly. (9.85) U.S. Federal Power Commission. Washington, D.C. 20426.

Includes production of energy, capacity of plants, fuel consumption of electric power plants, electric utility system information, sales of electric energy, etc.

ENVIRONMENT REPORT. Semimonthly. (90.00) Washington, Trends Publ, National Press Bldg., 20004.

Newsletter reporting federal government activities regarding the environment and energy. Cites significant legislation, documents relevant to issues, especially government publications. Section on environmental trends lists reports and papers available. Also includes an Environmental Booklist.

ENVIRONMENTAL BIOLOGY OF FISHES. 3/year. price not given. (Text in English) Dr. W. Junk, B.V. Publishers, Box 3713, The Hague, Netherlands.

ENVIRONMENTAL LAW REVIEW. Annual. (29.50) Sage Hill, 435 Hudson ST, New York, NY 10014.

A collection of the best law articles on environmental law practice.

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ENVIRONMENTAL MANAGEMENT. Bimonthly. (39.00 to individuals; 59.00 to institutions) Springer-Verlag, 175 5th Avenue, New York, NY 10010

ENVIRONMENTAL SCIENCE AND TECHNOLOGY. Monthly. (15.00 to non-members; 10.00 to members) American Chemical Society, 20th and Northampton Sts., Easton, PA 18042)

Articles cover mainly research reports in the environmental sciences with frequent news reports

ESTUARINE AND COASTAL MARINE SCIENCE. Bimonthly. (63.80) Academic Press, Inc. 111 5th Avenue, New York, NY 10003

HYDATA. Monthly. St. Anthony FAlls Hydraulic Lab., Mississippi River at 3rd Ave., Minneapolis, MN 55414

JOURNAL OF APPLIED ECOLOGY. 3/year. (105.00) Blackwell Scientific Pubn., Osney Mead, Osford, England OX2 OEL

JOURNAL OF ENVIRONMENTAL SCIENCE AND HEALTH: PART A: ENVIRONMENTAL SCIENCE AND ENGINEERING. 10 issues per year. (65.00) Marcel Dekker Journals, P.O. Box 11305, Church St. Station, New York, NY 10249

JOURNAL OF EXPERIMENTAL MARINE BIOLOGY AND ECOLOGY. Quarterly. Elsevier North Holland, 52 Vanderbilt Avenue, New York, NY 10017

JOURNAL OF HYDROLOGY. 16/year. Elsevier North Holland, 52 Vanderbilt Avenue, New York, NY 10017

JOURNAL OF THE AMERICAN WATER WORKS ASSOCIATION. Monthly. American Water Works Association, 6666 W. Quincy Avenue, Denver, CO 80235

LOWER COLORADO RIVER REVIEW.

MONTHLY ENERGY REVIEW. Monthly. (36.00) U.S. Federal Energy Administration. Orders to NTIS, Springfield, VA 22161

102 MONITOR. Monthly. Washington, D.C.: Council on Environmental Quality. Available from GPO, SuDoc # PrEx 14.10: (vol/number)

Lists the environmental impact statements filed with the Council under the provisions of the National Environmental Policy Act as well as the EPA's comment filed under provisions of the Clean Air Act, items of concern in NEPA case law and information on the Council's environmental studies.

PUBLIC UTILITIES FORTNIGHTLY. Semimonthly. (45.00) Public Utility Reports, Inc. Suite 502, 1828 L St., N.W. Washington, D.C. 20036

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QUARTERLY REVIEW OF BIOLOGY. Quarterly. Stony Brook Foundation, Inc., State University of New York at Stony Brook, NY 11798

SOUTHWEST ENERGY AND UTILITY WATCH.

SOUTHWEST WATER WORKS JOURNAL. free to qualified personnel. American Water Works Assn, Southwest and Texas Sections, 306 E. Adams Avenue, Temple, TX 76501

TEXAS ENERGY AND MINERAL RESOURCES. Monthly. Free. Texas A&M University Center for Energy and Mineral Resources, College Station, TX 77843

TEXAS REPORTS ON BIOLOGY AND MEDICINE. Quarterly. (4.00) University of Texas at Galveston, Medical Branch, Galveston, TX 77550

TEXAS WATER DEVELOPMENT BOARD REPORT. Annual. free. Texas Water Development Board, P.O. Box 13087, Capital Station, Austin, 78711

WATER NEWSLETTER AND RESEARCH AND DEVELOMENT NEWS. Semimonthly. (36.00) Water Information Center, Inc. 44 Sintsink Drive East, Port Washington, NY 11050

News of technological and legal developments in all aspects of water.

WATER POLLUTION CONTROL FEDERATION JOURNAL. Monthly. Water Pollution Control Federation, 2626 Pennsylvania Ave.N.W., Washington, D.C. 20037

WATER RESEARCH. Monthly. (with PROGRESS IN WATER TECHNOLOGY, 250.00) Pergamon Press, Inc., Journals Dept., Maxwell House, Fairview Park, Elmsford , NY 10523

WATER RESOURCES BULLETIN. Bimonthly. (23.00) American Water Resources Association, 206 East University Avenue, Urbana, IL 61801

Provides a forum for engineers and physical, biological and social scientists in their efforts to advance water resources research, planning, development, management and education

Appendix B.
Selected List of Materials.

V. REVIEW AND CURRENT AWARENESS JOURNALS

ADVANCES IN ECOLOGICAL RESEARCH. Annual. price varies. Academic Press, 111 Fifth Avenue, New York, NY 10003

Designed for both general biologists and specialists in ecology. Includes 4 comprehensive and critical reviews of the significant literature of ecological research. Extensive citations and bibliographies.

ADVANCES IN ENVIRONMENTAL SCIENCE AND TECHNOLOGY. Irregular. Price varies. Wiley-Interscience, 605 3rd Avenue, New York, NY 10016

Devoted to the study of the quality of the environment and to the technology of its conservation.

ADVANCES IN HYDROSCIENCE. Annual. price varies. Academic Press, 111 Fifth Avenue, New York, NY 10003

ADVANCES IN MARINE BIOLOGY. Annual. price varies. Academic Press.

ADVANCES IN WATER POLLUTION RESEARCH; PROCEEDINGS OF THE INTERNATIONAL CONFERENCE. Biennial. Pergamon Press, Maxwell House, Fairview Park, Elmsford, NY 10523

AMERICAN WATER RESOURCES CONFERENCES. ANNUAL PROCEEDINGS. Annual (15.00) American Water Resources Conferences, St. Anthony Falls Hydraulic Lab., Mississippi River at 3rd, Minneapolis, MN 55414

ANNUAL REVIEW OF ECOLOGY AND SYSTEMATICS. 16/year. (15.00) Annual Reviews, 4139 el Camino Way, Palo Alto, CA 94306.

Approximately 16 reviews annually covering assessments of ecosystems, reproduction, resource management, systems analysis, human ecology, techniques and instrumentation.

CURRENT CONTENTS. Weekly. (135.00) Institute for Scientific Information, Philadelphia, PA 19106.

A listing of the contents of the current issue of each of many leading journals in the sciences. Available in the following sections:

1) Physical and chemical sciences
2) Engineering, technology and applied sciences
3) Life sciences
4) Agricultural, biology, and environmental sciences

Each section covers upwards of about 1,000 journals, or some 200 journals per week.

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Selected List of Materials.

ENVIRONMENTAL POLLUTION: A GUIDE TO CURRENT RESEARCH. Produced from data gathered by Science Information Exchange, Smithsonian Institution; New York: CCM Information, 1971. (29.95)

A description of federally-sponsored research projects. First volume covers 1969 and 1970. Divided into broad topic areas; general topics of investigations, names and addresses of investigators, descriptions of topics and support institutions.

OCEANOGRAPHY AND MARINE BIOLOGY: AN ANNUAL REVIEW. New York: Hafner (31 E. 10th Street, New York, NY 10011). Annual.

Highly technical review articles. Reviews often have addenda that discuss papers written since the completion of the reviews.

PROGRESS IN WATER TECHNOLOGY. Bimonthly. (160.00) Pergamon Press, Maxwell House, Fairview Park, Elmsford, NY 10523.

UNIVERSITY OF TEXAS, PORT ARANSAS. MARINE SCIENCE INSTITUTE. CONTRIBUTIONS IN MARINE SCIENCE. Annual. (4.36 per vol.) University of Texas, Port Aransas, Marine Science Inst., Port Aransas, TX 78375

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VI. SPECIAL SERVICES

ENVIRONMENT REGULATION HANDBOOK. Environment Information Center, Inc. 124 E. 39th Street, New York, NY 10016. Monthly updates. (95.00)

Datailed coverage of regulations in the area of air pollution, land use, mobile sources, National Environmental Policy Act, noise,..., solid wastes and water pollution. Copies of regulations, names of officials and other information.

ENVIRONMENT REPORTER. Bureau of National Affairs, Washington, D.C. 20037 (District Representative: Timothy Stokes, 12005 Greyrock Lane, Austin, TX 78750 Ph. 454-7331) Weekly updates. (420.00)

A subscription service which attempts to be comprehensive in its coverage of the environment. Fe eral and state developments are closely monitored and texts of all new environmental regualtions and legislation can be found here. Coverage is topical in Current Developments section, which also features brief coverage of coming events and governmental action

ENVIRONMENTAL LAW REPORTER. Environmental Law Institute, Public Law Education Institute, 630 Dupont Circle Bldg, 1346 Connecticut Ave., NW, Washington D.C. 20036 Monthly updates. (250.00)

This subscription service reports on litigation involving the environment. Each issue is divided into Summary & Comments, Litigation, Administrative Proceedings, Statutory & Administrative Materials, Articles & Notes, and Indexes. A major current awareness service covering all phases of environmental law.

Appendix B.
Selected List of Materials

VII. SOURCES CONSULTED

Aluri, Rao. "Reference Sources Among NTIS Technical Reports." Reference Services Reviews, July/Sept. 1977: 27-32.

Balachandran, Sarojini. "Engineering Our Environment." Reference Services Reviews, July/Sept. 1977: 21-26.

Chen, Ching-Chih. Scientific and Technical Information Sources. Cambridge, Mass.: MIT Press, 1977.

Irregular Series and Annuals. 4th Ed. 1976-77. Bowker, 1976.

This particular source was useful in identification of review journals and annual conference proceedings. The following subject headings were useful: "Biology (with subdivisions)" "Earth Sciences-Hydrology; -Oceanography" "Engineering (with subdivisions)" "Environmental Studies" "Meteorology" "Water Resources"

Malinowsky, Harold Robert. Science and Engineering Literature. 2d ed. Littleton, CO: Libraries Unlimited, 1976.

Ulrich's International Periodicals Directory. 17th ed. 1977-78. Bowker, 1977.

Companion volume to Irregular Series and Annuals; this volume is used to locate journals and periodicals. The subject approach is similar to that in the other volume.

APPENDIX C

DATA BASES

The following is a list of selected data bases of particular interest to Espey-Huston & Assoc. It has been compiled from information supplied by the three leading computerized data base vendors, Lockheed, SDC and BRS. (Full names and addresses are given following the list.) For each data base listed, its availability from each vendor is indicated. Prices of the services vary, but the on-line per hour charge usually falls within the range of 35.00 to 90.00, depending on the data base and vendor. Off-line printing charges are generally in the neighborhood of 10 per record.

Data Base Name	Subject and Source	Beginning Date	Number of Items	Availability
APTIC	Covers all aspects of air pollution. Includes but not limited to all abstracts in Air Pollution Abstracts. Includes social, political legal & administrative aspects as well as technical information on the field.	1966-	84,000	Lockheed
ASFA	Aquatic Sciences & Fisheries Abstr.: comprehensive data base on life sciences of seas and inland waters as well as related legal,political & social topics.	1975-	6,800	Lockheed
BIOSIS PREVIEWS	Contents of Biological Abstracts & BioResearch Index. Covers 8000 serial publications.	1972- 1969-	1,996,000 (data not avail.)	Lockheed SDC
CDI	Comprehensive Dissertations Index	1861-	560,000	BRS SDC Lockheed
CRIS	Current awareness data base for agriculturally related research data bases.	1974-	24,500	Lockheed
COMPENDEX	Machine-readable version of Engineering Index/ covers approximately 3500 journals	1970-	600,000	Lockheed SDC

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Data Bases

ENERGYLINE	Machine-readable version of Energy Information Abstr.; Primary source for info relating specifically to energy. Covers books, journals, Cong. committee reports, conference proc., speeches and statistics.	1971-	18,000	Lockheed SDC
ENVIRON-LINE	Coverage corresponds to Environment Abstracts. Includes all aspects of environmental studies.	1971-	60,000	Lockheed SDC
EPB	EPB is the Environmental Periodicals Bibliography, covering human ecology, atmospheric studies, land resources, water resources and nutrition and health	1973	50,000	Lockheed
Environ-mental Impact Statements	Same coverage as EIS, i.e., abstracts of about 120 new EIS's per month.	(note: as of early 1978, this data base was planned for inclusion by BRS; Lockheed do not yet have it available.)		
MGA	Meteorological and Geophysical Abstracts; Covers 200 primary sources in meteorology, astrophysics, physical oceanography, hydrology, environmental sciences and glaciology.	1972	30,000	Lockheed
NTIS	Corresponds to Weekly Gov't Abstracts and Government Research Announcements	1964-	610,000	Lockheed SDC BRS
OCEANIC ABSTR.	Covers worldwide technical information on literature of the seas. Biology, geology, meteorology, oceanography, desalination, pollution, coastal resources, etc.	1964-	95,000	Lockheed
POLLUTION ABSTR.	Covers 2,500 journals, plus conference proceedings, papers, etc. Includes air pollution, environmental quality, noise pollution, pesticides, solid waste, water pollution	1970-	47,500	Lockheed SDC

Appendix C.
Data Bases

SCISEARCH	Includes Science Citation Index plus additional items from Current Contents not available in the printed version of SCI	1974-	1,820,000	Lockheed

Addresses of the leading vendors:

Lockheed Information Systems
DIALOG SYSTEM
Code 5020/201
3251 Hanover St.
Palo Alto, CA 94304
Toll-free: 800-227-1960

Systems Development Corporation (SDC)
ORBIT SYSTEM
2500 Colorado Avenue
Santa Monica, CA 90406
Toll-free: 800-471-7229

Bibliographic Retrieval Services, Inc. (BRS)
Corporation Park, Bldg. 702
Scotia, N.Y. 12302
518-374-5011

The vendors will be more than happy to provide information on their current prices and data base selections.

APPENDIX D.

SPACE PLANNING AND EQUIPMENT

PART 1. Figures Used for Library Space Planning

# of books per linear foot: 7

# of reports and pamphlets per linear foot: 15

Size of bookshelves: 18 linear feet of shelfspace per single-face section (3' wide X 6' high)

Aisle space between shelves: 3'

Space between tables, other furniture and shelves: 5'

PART 2. Partial List of Suppliers of Library Supplies and Equipment

Brodart, Inc.
1609 Memorial Avenue
Williamsport, VA 17701

Demco Educational Corp.
Box 7488
Madison, WI 53707

The Highsmith Co., Inc.
P.O.Box 25, HIghway 106 East
Fort Atkinson, WI 53538

Gaylord Brothers, Inc.
Syracuse, NY 13201

Appendix D.
Space Planning & Equipment

PART 3. Furniture and Equipment Costs for Phase II

Note: Cost estimates are based on the current catalogs of the following suppliers: Highsmith, Brodart and Gaylord.

Shelving:	6 double-face free-standing shelf sections(70"X36")	
	4 "starter" sections @ $124.10 each	$496.40
	8 "add-on" sections @ $106.45 each	$851.60
	4 end panels @ $61.50 per pair	$123.00
	11 single-face shelf sections (70"X36").	
	4 "starter" sections @ $124.10 each	$496.40
	7 "add-on" sections @ $106.45 each	$745.15
	4 single-face shelf sections (42"X36")	
	2 "starter" sections @ $76.50 each	$153.00
	2 "add-on" sections @ $66.65 each	$133.30
Desk: (1 double pedestal desk)		$150.00
Display Table		$298.00
Card catalog:	2 five-drawer modular sections	$197.95
	1 table to support sections (26" high)	$68.95
Microfiche cabinet:		$98.05
	1 table to support cabinet:	$61.60
Microfiche readers:		*
	2 tables to support readers @ $80.00 each	$160.00
Work table: (36" X 60", with adjustable legs)		$130.00
Study table:(36" X 60")		$168.00
Chairs:	1 swivel chair for librarian	$100.00
	1 chair for workroom	$45.00
	2 chairs for index tables @ $45.00 each	$90.00
	4 chairs for study table @ $60.00 each	$240.00
Index Tables		$475.00
Filing cabinets		*
Typewriter		*
TOTAL COST OF FURNITURE AND EQUIPMENT FOR PHASE II:		$5281.40

APPENDIX E.

MANUAL OF PROCEDURES

This manual of procedures which begins on the following page, is comprised of the following parts:

I. ACQUISITION OF INFORMATIONAL MATERIALS

II. PROCESSING OF LIBRARY MATERIALS

III. UTILIZATION OF LIBRARY MATERIALS

Appendix E.
Manual of Procedures

PART I: ACQUISITION OF INFORMATIONAL MATERIALS

For requests for purchase of books, technical reports, government documents and other materials, it is recommended that a standard request form, an example of which is illustrated below, be filled out by the person making the request:

Author _____

Title _____

_____

NTIS/GPO # _____

Publisher _____

Price _____ Date _____

Source _____

Requestor _____

Upon receipt of the form, the following steps will be taken:

1. Search: check library catalog and on order file to avoid duplication of materials

2. If found, in catalog or in on order file, notify requestor.

3. If not found, take the following steps, depending upon the format of the material requested.

1. BOOK ORDERS

The majority of book orders will be handled through J.A. Majors Company (1806 Southgate Blvd, Houston, TX 77025), the scientific and technical book dealer for the state of Texas. Orders placed with Majors should be assigned consecutive order numbers; a list of these items ordered will be maintained in a ring binder by order number.

A five-part order form imprinted with Espey Huston's name and

address will then be prepared for each item being ordered. When using this five-part order form, the parts shall be distributed as follows:

Part 1: Sent to Majors or publisher
Part 2: " "
Part 3: To be filed in on-order file (by author)
Part 4: " "
Part 5: To be returned to requestor to indicate that item has been ordered

Discussion of later use of the parts of the form will follow in the section on Processing of Library Materials. For rush items, a phone order to Majors is preferable; the standard request form will then serve as the on-order record.

2. TECHNICAL REPORT ORDERS

Technical reports will be ordered through NTIS. It is recommended that a deposit account, which has been established with NTIS, be continued, to facilitate the efficient handling of orders. These orders will be placed using the forms provided by NTIS, or by telephone.

3. GOVERNMENT PUBLICATIONS ORDERS

Government documents will be ordered through either the Superintendent of Documents or directly through the issuing agency. It is recommended that a deposit account, which has been established with the Superintendent of Documents, be continued. Deposit order blanks supplied by the Superintendent will be used for ordering purposes. One copy of the Deposit Order Blank will be sent to the Superintendent of Documents and one copy retained in the government publications on-order file.

A number of free publications of State and local agencies can be obtained through contact with these agencies. It is recommended that the library maintain contact with these agencies for this purpose.

4. PERIODICALS

New periodical subscriptions will be ordered by letter directly from the publisher. A copy of the letter will be retained in a special file until the first issue is received.

Appendix E.
Manual of Procedures

PART II. PROCESSING OF LIBRARY MATERIALS

1. BOOKS

When a book is received, parts 1 and 2 of the order form are pulled from the on-order file. Part 1 is placed in the "received" file to await the invoice. Part 2 accompanies the book through the remaining steps of the processing. The following steps are taken with each book:

1. The book is stamped " ESPEY HUSTON & ASSOC. TECHNICAL LIBRARY ____"
2. The book is assigned an accession number, which is recorded in the accession list and in the book
3. Cataloging
    a. Check the book for CIP information - if available, use to assign LC (Library of Congress) Classification number and subject headings
    b. If no CIP information is available, check for Library of Congress card order number. If available, use to order LC catalog cards.
    c. If no LC card number is available, the book must be cataloged by the librarian. Classification numbers will be taken from the appropriate schedule of the Library of Congress Classification System. An author (or "Cutter" number) will be assigned from the Cutter table (see next page.) subject headings will be assigned from the Library of Congress Subject Headings, with backup assistance from Energy Microthesaurus, Environmental Microthesaurus and Thesaurus of Water Resources Terms when needed.

In the cases of (a.) and (c.) above, catalog cards must be produced in-house, although in the case of (a.), LC cards can be ordered if desired. In the case of producing cards, the information recorded on the catatog card shall include the following:

AUTHOR NUMBER TABLE

Library of Congress author symbols are composed of an initial letter followed by Arabic numbers. The numbers are used decimally and are assigned on the basis of the tables given below in a manner that preserves the alphabetical order of names within a class.

1. After the initial letter S

for the second letter:	a	ch	e	h,i	m,p	t	u
use number:	2	3	4	5	6	7 8	9

2. After the initial letters Qu

for the second letter:	a	e	i	o	r	y
use number:	3	4	5	6	7	9

3. After other initial consonants

for the second letter:	a	e	i	o	r	u	y
use number:	3	4	5	6	7	8	9

4. After initial vowels

for the second letter:	b	d	l,m	n	p	r	s,t	u,y
use number:	2	3	4	5	6	7	8	9

from Cataloging Service, Bulletin 104, May 1972

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Information to be included on catalog cards:

Classification number

Author

Title and subtitle

Edition

Place of publication, publisher, date of publication

Number of volumes and/or pages

Subject headings

Added entries (co-authors, etc.)

The format of the card is illustrated:

Z
7401
M28

Malinowsky, Harold Robert
Science and engineering literature; a guide to reference sources. 2d ed. Littleton, Colo: Libraries Unlimited, 1976

186 p.

1. Reference books-Science. 2.Science-bibliography. I. Gray, Richard A. II. Title

This information should be taken from the title page or from the CIP information: author, title, subtitle, edition, place, publisher, date of publication. If any of the above is not available within the volume, omit. To establish form of entry for corporate and government bodies, the use of the Anglo-American Cataloging Rules (North American Text, Chicago: American Library Association, 1967, $5.60 paperback ed.).

As indicated on the sample card, the classification number should be typed in the upper left-hand corner of the card. Subject headings should all be listed by Arabic numbers near the bottom of the card; added entries for co-authors, title,etc., follow the subject headings and are

Appendix E.
Manual of Procedures

listed by Roman numerals.

The original card is thus produced for the author or main entry in the card catalog. This card is reproduced to provide cards for each of the subject headings, added entries and one card for the shelf list. (See below for an explanation of the files maintained.) For the sample card on the previous page, a total of 5 additional cards would be needed.

The files maintained for records of books are:

Author/title catalog: This is an alphabetical catalog in which all author and title cards are interfiled. It acts as a finding list for materials as well as the authority file for forms of names which have been used

Subject catalog: This file contains all subject entries filed alphabetically. It provides subject access to the books at Espey-Huston, as well as acting as the authority file for subject headings used.

Shelf-list: This is the file of the books arranged in classification number order, which will be used primarily as an inventory control device, but can also be used to generate classified lists of books

Production of Catalog Cards:

It is recommended that specifically-designed card stock, for use with the Xerox copier be used for duplication of the catalog cards. (An illustration is given on the following page.) After cards have been duplicated, each of the subject headings and added entries should then be typed on a card, as illustrated.

Z
7401
M28

REFERENCE BOOKS-SCIENCE
Malinowsky, Harold Robert
Science and engineering literature; a guide to reference sources. 2d. ed. Littleton, Colo: Libraries Unlimited, 1976

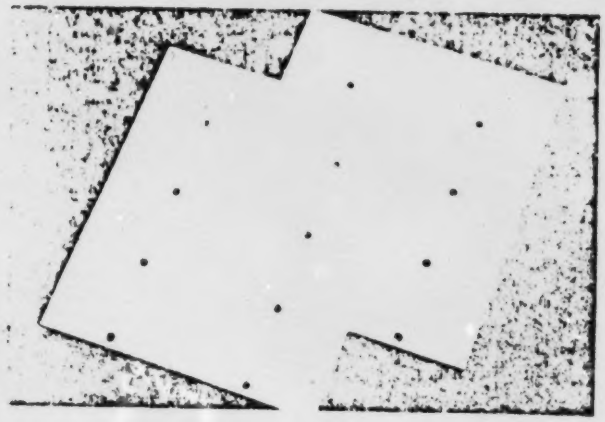
186 p.

For Xerox 2400, 3600-1, 7000, 914, 720 and 1000

For Xerox 914, 720 and 1000

Stock	No	Style	1000 Sheets	5000 Sheets
	1306	Plain	$39.35	$37.20 M
	1307	Perforated	44.85	42.20 M
	1406	Plain	22.75	21.50 M
	1407	Perforated	28.25	26.50 M
	1506	Plain	39.35	37.20 M
	1507	Perforated	44.85	42.20 M

For Printing or Duplicating



		1000 Sheets	5000 Sheets
		67.30	$63.70 M
		74.50	69.95 M
		36.65	34.60 M
		43.40	40.85 M
		67.30	63.70 M
		74.50	69.95 M

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Subject entry

Z
7401
M28

SCIENCE-BIBLIOGRAPHY
Malinowsky, Harold Robert
Science and engineering literature; a guide to reference sources. 2d. ed. Littleton, Colo: Libraries Unlimited, 1976

186 p.

1. Reference books-Science. 2. Science-bibliography. I. Gray, Richard A. II. Title

Co-author

Z
7401
M28

Gray, Richard A.
Malinowsky, Harold Robert
Science and engineering literature; a guide to reference sources. 2d ed. Littleton, Colo: Libraries Unlimited, 1976

186 p.

1. Reference books-Science. 2. Science-bibliography. I. Gray, Richard A. II. Title

Title added entry

Z
7401
M28

Science and engineering literature
Malinowsky, Harold Robert
Science and engineering literature; a guide to reference sources. 2d ed. Littleton, Colo: Libraries Unlimited, 1976

1. Reference books-Science. 2. Science-bibliography. I. Gray, Richard A. II. Title

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Each card is then filed under the appropriate heading in the author/title or subject catalog. The shelf list card (not illustrated) is simply an exact copy of the main entry and is filed in the shelf list file by LC class number.

After the book has been cataloged, a check-out card and spine label will then be produced, if the book is to be checked out on permanent loan. Check-out cards should be of the following form and have the following information:

Z
7401 Malinowsky. Science and
M28 engineering literature

BORROWER DATE

_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____

The spine label needs only the complete classification number and author number:

Z
7401
M28

Checkout cards can be kept in a file, arranged by classification numbers, after the book has been sent to the requestor.

In the case of reference books to be kept in the library, only a spine label will be produced in this phase of processing.

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2. Technical Reports

Upon receipt of technical reports, the following procedures will be followed:

1. Assign a Report Accession Number, to be written on order slip
2. Stamp with"ESPEY HUSTON & ASSOC. TECHNICAL LIBRARY"
3. Catalog:

The main entry card for technical reports will contain the following information:

Technical report #
Author
Title
Agency responsible for
Other agencies involved
NTIS Accession number
Date
Subject Descriptors
Indication of "MICROFICHE" if this is the case

The format of the card should be similar to the format of the book cards illustrated in the previous section. Production of additional cards for technical reports will also be done in the same manner as catalog cards for books, using the Xerox duplicator. The technical reports will be filed in four separate files:

(1) Author or agency file
(2) Report number file
(3) Title file
(4) Subject file

Subject headings used for technical reports will be taken from the list of descriptors,/using only those which are most appropriate in the judgement of the librarian. After the technical report has been cataloged, a checkout card and label will be produced, similar to those used for books, except that the Report Accession Number will replace the call number.

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3. Government Documents

After initial check-in, government documents shall be handled according to individual format:

(1) monographs will be treated and cataloged as regular books
(2) serial publications will be treated as periodicals
(3) reports will be treated as technical reports

4. Periodicals

Because of their special nature, periodicals and serial publications demand special treatment. Upon receipt of each issue of a periodical, the only processing which will be done to the item itself is to stamp it with "ESPEY HUSTON & ASSOC. TECHNICAL LIBRARY." Periodicals will be shelved in the library in alphabetical order by title.

A check-in procedure is necessary to keep a record of the regular receipt of periodicals and to alert the library personnel of the need to claim issues which haven't arrived. The visible file is a special file which has been designed for this purpose. It is illustrated on page 96 of the Highsmith Library & Audiovisual Equipment and Supplies, 1977/78, which I have provided for your information.

Each of the cards in this file contains check-in records for each particular periodical the library subscribes to.

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PART III. UTILIZATION OF LIBRARY MATERIALS

The library should maintain a permanent checkout policy, as mentioned earlier, in order that the informational materials can be where they are most needed. The items added to the library's collection will therefore be checked out to the originator of the request as soon as processing is completed. The maintenance of a circulation file will serve the purpose of keeping a record of who has what so that unnecessary duplication of materials may be avoided and materials may be quickly and conveniently located when needed.

The policy should be flexible, however, especially in regard to materials which have been ordered for a particular project and cannot afford to be delayed by processing. For these materials, the permanent check-out card should be typed with just the author and title and project, and the material should then be sent to the person needing it without delay. A separate file by author (or project) can be maintained for these items, which can be completely processed after the project has been completed.

The circulation file will then contain these parts:

(1) Book file, arranged by classification number
(2) Report file, arranged by report number
(3) Project materials file, arranged by author (or project)

In order to ensure that all personnel at Espey Huston remain aware of the library's acquisitions, the library should regularly distribute an announcement of newly acquired materials. This list shall be made by arranging the main entry cards for all items to be included so that the cards overlap and only the author, title and other important information is visible on each card. The cards should then be xeroxed and the resulting list can be distributed to the staff.

APPENDIX F

SUBJECT HEADINGS LIST

The following photocopied pages have been taken from the Library of Congress Subject Headings, 8th edition, as examples of the subject headings and cross references provided by the Library of Congress.

It should be noted that in most instances, reference to the corresponding Library of Congress Classification number is given in parentheses beside the subject heading.

Ordering information for the subject headings list is as follows:

Library of Congress Subject Headings, 8th ed., 1975
2 vols. 35.00/set
Sold by: Cataloging Distribution Service Division
Library of Congress
Bldg. 159
Navy Yard Annex
Washington, D.C. 20541

Make check or money order payable to: "Chief, Cataloging Services Division, Library of Congress"

Hydraulics *(TC160-179)*
- *sa* Atomization
- Channels (Hydraulic engineering)
- Fire extinction
- Fluids
- Hydraulic engineering
- Hydraulic jump
- Hydraulic measurements
- Hydraulic models
- Hydrodynamics
- Hydrostatics
- Jets
- Nozzles
- Seepage
- Surge tanks
- Venturi tubes
- Water—Air entrainment
- Water—Distribution
- Water hammer
- *x* Flow of water
- Water—Flow
- *xx* Fluid mechanics
- Hydraulic engineering
- Jets
- Liquids
- Mechanics
- Physics
- Water—Distribution

Note under Hydrodynamics
- — Abbreviations
- — Graphic methods
- — Laboratory manuals
- — Mathematics
- — Notation
- — Problems, exercises, etc.
- — Tables, calculations, etc. *(TC179)*
- — Terminology

Hydraulus
See Hydraulic organ

Hydrazine *(QD181.N15)*
- *xx* Disinfection and disinfectants

Hydrazines *(QD305.A8; QD341.A8)*
- — Physiological effect

Hydrazoic acid
See Hydronitric acid

Hydriae *(NK4650.H9)*
- *xx* Vases, Greek
- Vases, Roman

Hydriodic acid *(QD181.I1)*
- *x* Iodide of hydrogen

Hydro-aeroplanes
See Seaplanes

Hydro-electric plants
See Water-power electric plants

Hydrobiology
See Aquatic biology
- Fresh-water biology
- Marine biology

Hydroboration
- *xx* Reduction, Chemical

Hydrobotany
See Aquatic plants

Hydrobromic acid *(QD181.B7)*

Hydrocal
- *xx* Cement

Hydrocarbon research *(Indirect)*
- *x* Hydrocarbons—Research
- *xx* Research

Hydrocarbons *(QD305.H5-8; QD341.H9)*
- *sa* Alkylation
- Bitumen
- Caustobioliths
- Cracking process
- Gilsonite
- Methyl groups
- Mineral oils
- Paraffins
- Petroleum products
- Petroleum, Synthetic
- Synthine process
- *xx* Bitumen
- — Analysis
- — Nomenclature

Example under Chemistry—Nomenclature
- — Purification
- — Research

See Hydrocarbon research
- — Spectra *(QC463.H9)*
- — Storage
- — Tables, etc.

Hydrocele *(RC898)*
- *xx* Genito-urinary organs—Diseases

Hydrocephalus *(RC391)*
- *x* Water on the brain
- *xx* Brain—Diseases
- — Personal narratives

Hydrochloric acid *(Chemical technology, TP217.H8; Chemistry, QD181.C5)*
- *x* Muriatic acid
- — Molecular rotation

Hydrocortisone
- *x* Compound F
- Cortisol
- Hydrocortone
- *xx* Adrenocortical hormones
- Cortisone

Hydrocortone
See Hydrocortisone

Hydrocyanic acid *(Chemistry, QD181.C15; Disinfectants, RA766.H8)*
- *x* Prussic acid
- *xx* Disinfection and disinfectants
- — Physiological effect *(QP913.C15)*
- — Therapeutic use *(RM666.H8)*
- — Toxicology *(RA1242.H9)*

Hydrocyanic acid gas

Hydrocyclones
See Separators (Machines)

Hydrodynamic gyroscopes
See Fluid rotor gyroscopes

Hydrodynamic impact on seaplanes
See Seaplanes—Hydrodynamics

Hydrodynamic short range weather forecasting
- *x* Dynamic short range weather forecasting
- Weather forecasting, Hydrodynamic short range
- *xx* Hydrodynamic weather forecasting

Hydrodynamic weather forecasting
- *sa* Hydrodynamic short range weather forecasting
- Numerical weather forecasting
- *x* Dynamic weather forecasting
- Weather forecasting, Dynamic
- *xx* Dynamic meteorology
- Hydrodynamics
- Meteorology—Mathematical models
- Weather forecasting

Hydrodynamics *(QA911-927)*

Here are entered works on the theory of the motion of fluids. Works dealing with the technical application of the science are entered under Hydraulics.
- *sa* Blades
- Boundary layer (Meteorology)
- Buoyant ascent (Hydrodynamics)
- Cavitation
- Channels (Hydraulic engineering)
- Electrohydrodynamics
- Frictional resistance (Hydrodynamics)
- Gravity waves
- Harbors—Hydrodynamics
- Hydrodynamic weather forecasting
- Hydrostability
- Hydrofoil boats—Hydrodynamics
- Hydrostatics
- Jets
- Magnetohydrodynamics
- Mixing
- Pipe—Hydrodynamics
- Rotating masses of fluid
- Sailboats—Hydrodynamics
- Seaplanes—Hydrodynamics
- Ship resistance
- Ships—Hydrodynamics
- Siphons
- Sloshing (Hydrodynamics)
- Tank-vessels—Hydrodynamics
- Turbulence
- Underwater explosions
- Viscosity
- Vortex-motion
- Water hammer
- Water waves
- Waves
- *xx* Dynamics
- Fluid dynamics
- Fluid mechanics
- Hydraulic engineering
- Hydraulics
- Liquids
- Mathematical physics
- Mechanics
- Mechanics, Analytic
- — Computer programs
- — Electromechanical analogies
- — Simulation methods

Hydroelasticity
- *sa* Planing hulls
- Ships—Hydrodynamic impact
- Sloshing (Hydrodynamics)
- Vibration (Marine engineering)
- *xx* Elastic waves
- Elasticity
- Hydrodynamics

Hydrofluoric acid *(QD181.F1)*
- — Patents

Hydrofoil boats *(VM362)*
- *x* Hydrofoils (Vessels)
- *xx* Boats and boating
- — Hydraulic equipment
- — Hydrodynamics
- *xx* Hydrodynamics
- — Juvenile literature
- — Law and legislation *(Direct)*
- — Maintenance and repair

Hydrofoils
See Planing hulls

Hydrofoils (Vessels)
See Hydrofoil boats

Hydrogen *(Chemical technology, TP245.H9; Chemistry, QD181.H1)*
- *sa* Interstellar hydrogen
- Iron—Hydrogen content
- Liquid hydrogen
- Metals—Hydrogen content
- Nonferrous metals—Hydrogen content
- Steel—Hydrogen content
- Titanium—Hydrogen content
- Water—Electrolysis
- Zirconium alloys—Hydrogen content
- *xx* Gases—Liquefaction
- Nonmetals

Example under Gases
- — Analysis
- *sa* Hydrogen-ion concentration—Measurement
- — Dipole moments
- — Isotopes
- *sa* Deuterium
- *x* Heavy hydrogen
- Hydrogen isotopes
- *xx* Tracers (Chemistry)

Ecclesiastical year
See Church year
Ecdysis
sa Ecdysone
x Molting in arthropods and reptiles
Moulting in arthropods and reptiles
xx Arthropoda—Physiology
Ecdysone
Insects—Development
Molting
Myriapoda—Development
Reptiles—Physiology
Ecdysone
sa Ecdysis
xx Ecdysis
Hormones
Echea
See Vases, Acoustic
Echeia
See Vases, Acoustic
Echeloot language
See Tlakluit language
Echinococciasis
See Echinococcosis
Echinococcosis *(SF810.H8)*
x Echinococciasis
Hydatid disease
Echinodermata *(Indirect)* *(QL381-5)*
sa Crinoidea
Holothurians
Ophiuroidea
Pelmatozoa
Sea-urchins
Starfishes
x Radiata
Zoophyta
xx Invertebrates
— Identification
— Physiology
Echinodermata, Fossil *(QE781-3)*
sa Holothurians, Fossil
Stylophora
Echinoidea
See Sea-urchins
Echiuroidea *(Indirect)* *(QL391.G5)*
xx Gephyrea
Echo *(QC233)*
xx Acoustic phenomena in nature
Sound
— Juvenile literature
Echo cardiography
See Ultrasonic cardiography
Echo encephalography
See Ultrasonic encephalography
Echo project
See Project Echo
Echo ranging
See Sonar
Echo scattering layers *(Indirect)*
x Scattering layers, Echo
Sonic scattering layers
Sound scattering layers
xx Echo sounding
Marine fauna
Sonar in fishing
Echo sounders
See Echo sounding
Echo sounding *(Navigation, VK584; Oceanography, GC378.E)*
sa Echo scattering layers
x Echo sounders
Sonic sounding
xx Deep-sea sounding
Sounding and soundings
Underwater acoustics
Echo sounding in fisheries
See Echo sounding in fishing
Echo sounding in fishing *(Indirect)* *(SH344.23.E3)*
x Echo sounding in fisheries
xx Fish detection
ECHO viruses
x Echoviruses
Enteric cytopathogenic human orphan viruses
xx Enteroviruses
Viruses
Echolocation (Physiology)
xx Animal orientation
Hearing
Orientation
Sonar
Echoviruses
See ECHO viruses
Eclampsia
See Convulsions
Eclampsia puerperalis
See Puerperal convulsions
Eclectic dispensatories
See Dispensatories, Eclectic
Eclectic medicine
See Medicine, Eclectic
Eclectic obstetrics
See Obstetrics, Eclectic
Eclectic surgery
See Surgery, Eclectic
Eclipses *(Calculation and prediction, QB175)*
sa Occultations
Transits
xx Astronomy
Astronomy, Spherical and practical
Occultations
Transits
Eclipses, Lunar *(QB579)*
Subdivided by date, *e.g.* Eclipses, Lunar—1866.
x Lunar eclipses
Moon—Eclipses
— 1866
Note under Eclipses, Lunar
Eclipses, Solar *(QB541-551)*
Subdivided by date, *e.g.* Eclipses, Solar—1854
x Solar eclipses
xx Sun
— 1854
Note under Eclipses, Solar

GENERAL SUBDIVISIONS

Juvenile literature *(QB541)*
Eclipses, Solar (in religion, folk-lore, etc.)
x Folk-lore of solar eclipses
xx Religion, Primitive
Eclipsing binaries *(QB821-4)*
x Eclipsing double stars
Eclipsing variables
xx Stars, Double
Stars, Variable
— Atlases *(QB821)*
— Spectra
— Tables, etc.
Eclipsing double stars
See Eclipsing binaries
Eclipsing variables
See Eclipsing binaries
Ecliptic *(QB171)*
xx Astronomy, Spherical and practical
Eclogite *(QE461)*
x Eklogite
Eclogues
See Pastoral poetry
Ecological genetics
xx Ecology
Genetics
Ecological research *(Direct)*
sa Research natural areas
x Ecology—Research
xx Research
— Law and legislation *(Direct)*
Ecological succession
sa Plant succession
x Succession, Ecological
— Juvenile literature
Ecological systems, Closed
See Closed ecological systems
Ecological systems, Closed (Space environment)
See Closed ecological systems (Space environment)
Ecologists *(Direct)*
xx Biologists
Conservationists
Naturalists
Scientists
Ecology • *(Indirect)* *(QH540-541)*
sa Agricultural ecology
Animal populations
Aquatic ecology
Bioclimatology
Biogeochemical cycles
Biological productivity
Biotic communities
Botany—Ecology
Cave ecology
Colonies (Biology)
Conservation of natural resources
Desert ecology
Ecological genetics
Fire ecology
Food chains (Ecology)
Forest ecology
Fresh-water ecology
Geographical distribution of animals and plants
Grassland ecology
Heath ecology
Hot spring ecology
Human ecology
Indicators (Biology)
Island ecology
Jungle ecology
Marine ecology
Marsh ecology
Meadow ecology
Microbial ecology
Microclimatology
Mountain ecology
Paleoecology
Prairie ecology
Predation (Biology)
Radioecology
Seashore ecology
Soil ecology
Swamp ecology
Tundra ecology
Wetland ecology
Zoology—Ecology
headings beginning with the word Ecological
x Balance of nature
Biology—Ecology
Bionomics
Environment
Oecology
— Authorship
— Caricatures and cartoons
— Examinations, questions, etc.
— Experiments
Juvenile literature
— Juvenile literature
— Laboratory manuals
— Mathematical models

Marine accidents
sa Collisions at sea
Motor-boats—Accidents and injuries
Ships—Fires and fire prevention
Shipwrecks
Submarine disasters
x Accidents, Marine
Ships—Accidents
xx Accidents
Maritime law
— Liability
See Liability for marine accidents
Marine aids
See Aids to navigation
Marine air conditioning
See Ships—Air conditioning
Marine algae *(Indirect)*
x Seaweed
xx Algae
Marine flora
Marine phytoplankton
— Analysis
— Economic aspects *(Direct)*
— Harvesting
— Identification
— Measurement
— Pictorial works
Marine algae as feed *(SF99.M)*
Marine algae as fertilizer *(S661.2.M3)*
Marine algae culture *(Indirect)*
x Seaweed culture
xx Mariculture
Marine animal oils
sa Fish-oil
Whale-oil
x Marine oils, Animal
xx Oils and fats
— Physiological effect
Marine aquaculture
See Mariculture
Marine aquarium fishes *(SF457.1)*
x Saltwater aquarium fishes
xx Aquarium fishes
Marine aquariums
x Aquariums, Marine
Aquariums, Saltwater
Saltwater aquariums
xx Aquariums
Marine biology
Marine fauna
Marine flora
— Juvenile literature
Marine aquariums, Public *(QL78.5)*
x Oceanariums
Public marine aquariums
Marine architecture
See Naval architecture
Ship-building
Marine biological laboratories
See Marine laboratories
Marine biologists *(Direct)*
xx Biologists
Marine biology *(Indirect)* *(Natural history, QH91-95)*
sa Aquatic pests
Dredging (Biology)
Fouling of ship bottoms
Mariculture
Marine aquariums
Marine ecology
Marine fauna
Marine flora
Marine laboratories
Marine microbiology
Marine radioecology
Marine resources
Marine sediments
Nets
Ocean bottom
Photography, Submarine
Radioactive tracers in marine biology
Seashore biology
x Biological oceanography
Brackish water biology
Deep-sea exploration
Hydrobiology
Ocean life
xx Aquatic biology
Biology
Dredging (Biology)
Marine fauna
Marine flora
Natural history
Oceanography
Underwater exploration
— Juvenile literature
— Laboratory manuals
— Pictorial works
— Research *(Direct)*
xx Biological research
— Study and teaching *(Direct)*
— Technique *(QH91.57)*
— Vocational guidance
See Marine biology as a profession
Marine biology as a profession
x Marine biology—Vocational guidance
Marine boilers
See Steam-boilers, Marine
Marine borers *(Indirect)* *(TC201)*
sa Ship-worms
xx Aquatic pests
Marine fouling organisms
Wood—Deterioration
Marine caves
x Sea caves
xx Cave diving
Caves
Coasts
Marine chemistry
See Chemical oceanography
Marine compressors *(VM821)*
xx Compressors
Marine engines
Marine refrigeration
Marine cookery
See Cookery, Marine
Marine Corps wives *(VE500)*
x Dependents of military personnel
Families of military personnel
Military dependents
Military families
xx Etiquette
Wives
Marine corrosion
See Sea-water corrosion
Ships—Corrosion
Marine deposits
See Marine sediments
Marine diesel motors *(VM770)*
xx Diesel motor
Marine engines
Motor-boat engines
Automatic control
Bearings
xx Bearings (Machinery)
Cooling
Design and construction
— Fuel systems
Lubrication
Maintenance and repair
Noise
Superchargers
Testing
Vibration
Marine disasters
See Shipwrecks
Marine disposal of radioactive wastes
See Radioactive waste disposal in the ocean
Marine ecology *(Indirect)*
sa Coral reef ecology
Estuarine ecology
Marine radioecology
Tide pool ecology
x Biological oceanography
xx Aquatic ecology
Ecology
Marine biology
— Juvenile literature
Marine electronic equipment
See Electronics on boats
Marine engineering *(VM600-989)*
Here are entered works relating to the applications of engineering to ships and their machinery. Works treating specifically of marine engines and boilers are entered under the headings Marine engines and Steam-boilers, Marine.
sa Deck machinery
Electricity on ships
Marine pipe-fitting
Nautical instruments
Ship propulsion
Ship resistance
Steering-gear
Vibration (Marine engineering)
x Engineering, Marine
Marine technology
Naval engineering
xx Civil engineering
Engineering
Mechanical engineering
Naval architecture
Naval art and science
Steam-navigation
— Examinations, questions, etc.
— Problems, exercises, etc.
— Terminology
— Vocational guidance
See Marine engineering as a profession
Marine engineering as a profession
x Marine engineering—Vocational guidance
xx Marine engineers
Marine engineers
sa Marine engineering as a profession
x Naval engineers
xx Engineers
Steam engineers
Marine engines *(VM731-775)*
sa Diesel motor
Junks—Motors
Marine compressors
Marine diesel motors
Marine gas-turbines
Marine nuclear reactor plants
Motor-boat engines
Steam-boilers, Marine
Steam-turbines, Marine
x Steam-engines, Marine
xx Engines
Ship-building
Steam-engines
Note under Marine engineering
— Automatic control
— Cooling
x Cooling of marine engines
xx Diesel motor—Cooling
Gas and oil engines—Cooling
— Design and construction
— Fluid dynamics
— Foundations
xx Foundations

Waste products as feed
Waste products as fuel *(TP360)*
sa Sewage-sludge fuel
x Organic waste as fuel
xx Fuel
Salvage (Waste, etc.)
Waste reclamation
See Salvage (Waste, etc.)
Waste recycling
See Recycling (Waste, etc.)
Waste reuse
See Recycling (Waste, etc.)
Waste stabilization lagoons
See Sewage lagoons
Waste trade
See Junk trade
Waste water reclamation
See Water reuse
Waste wool
See Wool waste
Wastepaper
See Waste paper
Wastes, Agricultural
See Agricultural wastes
Wastes, Nuclear
See Radioactive wastes
Wastes, Radioactive
See Radioactive wastes
Wat Tyler's Insurrection, 1381
See Tyler's Insurrection, 1381
Wataita (Bantu tribe)
See Taita (Bantu tribe)
Watarai Shintō
See Ise Shintō
Wataturu (Bantu tribe)
See Wanyaturu (Bantu tribe)
WATBAL (Electronic computer system)
Watch bracelets
xx Bracelets
Watch-dogs
See Watchdogs
Watch duty
See subdivision Watch duty *under navies, e.g.* United States. Navy—Watch duty
Watch fobs *(Direct)*
x Fobs
Watch keys
xx Clocks and watches
Locks and keys
Watch makers
See Clock and watch makers
Watch making
See Clock and watch making
Watch night
xx New Year
Watch repairing
See Clocks and watches—Repairing and adjusting
Watchdogs *(SF428.8)*
x Guard dogs
Sentry dogs
Watch-dogs
xx Burglary protection
Working dogs
Watches
See Clocks and watches
Watchkeeping (Psychology)
See Vigilance (Psychology)
Watchmen *(HV8290)*
sa Police
Police, Private
x Building guards
Night watchmen
xx Building-service employees
Burglary protection
Detectives
Police
— Collective labor agreements
See Collective labor agreements—Watchmen
Water *(Chemistry, QD169.W3; Conservation, HD1691-8; Meteorology, QC920; Physical geography, GB651-2397; Water in industry, TP262.3; Water-supply, TD201-500)*
sa Compressed water
Dew
Drinking water
Erosion
Feed-water
Floods
Fog
Fresh water
Frost
Geysers
Glaciers
Hail
Hydraulic engineering
Hydronymy
Hydrotherapy
Ice
Irrigation water
Lakes
Mineral waters
Moisture
Ocean
Oceanography
Polywater
Ponds
Rain and rainfall
Rivers
Sea-water
Snow
Springs
Steam
Wells
headings beginning with the word Water
xx Hydrology
— Aeration *(TD458)*
sa Deaerators
Reservoirs—Aeration
x Aeration of water
xx Sewage—Purification—Aeration
Water—Purification
— — Mathematical models
— Air entrainment
x Aerated water flow
Water flow, Aerated
White water (Hydraulics)
xx Hydraulics
Turbulence
— Analysis *(QD142; Sanitary analysis, TD380-387)*
sa Biochemical oxygen demand
Sea-water—Analysis
Water—Bacteriology
Water—Composition
Water—Electrolysis
Water quality bioassay
x Water-analysis
xx Sanitary chemistry
Water—Composition
Water—Pollution
Example under reference from Chemical analysis
— — Automation
— — Experiments
— — Information services *(Direct)*
— — Tables, etc.
— Bacteriology *(QR105)*
sa Ice—Bacteriology
Sea-water—Bacteriology
xx Fresh-water biology
Ice—Bacteriology
Sanitary microbiology
Water—Analysis
Example under Bacteriology
— Chlorination
See Water—Purification—Chlorination
— Composition *(QD169.W3)*
sa Aquarium water
Drinking water—Standards
Sea-water—Composition
Water—Analysis
Water—Dissolved oxygen
Water—Nitrogen content
Water quality
Water—Standards
xx Water—Analysis
— Conservation
See Water conservation
— Dissolved oxygen
sa Biochemical oxygen demand
x Dissolved oxygen in water
xx Biochemical oxygen demand
Oxygen
Water—Composition
— — Mathematical models
— Distribution *(TD481-491)*
sa Aqueducts
Hydraulics
Pumping stations
Sprinklers
Water-cranes
Water-pipes
Water-supply engineering
Water-towers
xx Hydraulics
Plumbing
Water-supply engineering
Electrolysis *(TP259)*
sa Hydrogen-ion concentration
x Electrolysis of water
xx Hydrogen
Hydrogen-ion concentration
Oxygen
Water—Analysis
— Experiments
— — Juvenile literature
— Filtration
See Water—Purification—Filtration
— Flow
See Hydraulics
— Fluoridation
x Fluoridation of water
Water fluoridation
xx Fluorides
Fluorine—Physiological effect
Teeth—Diseases
— Information services
— Laws and legislation *(Direct) (HD1691-8)*
sa Drainage laws
Drinking water—Law and legislation
Fishery law and legislation
International rivers
Irrigation laws
Riparian rights
Tide-waters—Law and legislation
Water districts
Water—Pollution
Water—Pollution—Law and legislation
Water-rights
Water-rights (International law)
Water, Underground—Law and legislation
x Law, Water
Water-power—Law and legislation
Water-supply—Law and legislation
xx Natural resources—Law and legislation

APPENDIX G

CLASSIFICATION SYSTEM

Some of the advantages of using the Library of Congress Classification system are illustrated in this section. First the CIP or Cataloging-in-Publication information which is available in an increasing number of new books and G.P.O. publications is discussed. This information is provided to publishers by the Library of Congress prior to the publication of the book; it is accomplished by the Library of Congress Cataloging Division being sent a maunscript copy of the item upon which to base the cataloging information. The CIP data, as illustrated below, appears on the verso (back) of the title page of the published book or document:

Library of Congress Cataloging in Publication Data

Malinowsky, Harold Robert.
Science and engineering literature

(Library science text series)
"First edition, by Harold Robert Malinowsky, appeared under the title Science and engineering reference sources."
Includes indexes.
1. Reference books—Science—2. Science—Bibliography. 3. Reference books—Engineering—4. Engineering—Bibliography. I. Gray, Richard A., joint author.
II. Gray, Dorothy A., 1926- joint author.
III. Title.
Z7401.M28 1976 [QI] 016.5 76-17794
ISBN 0-87287-098-7

As can be seen from this example, the cataloging information is nearly complete, lacking only the collation (number of pages, volumes, size, etc.). This information can easily be transferred to a catalog card and thereby eliminate the need for time-consuming (and therefore costly) original cataloging.

A second feature of the Library of Congress Classification System is that the Library of Congress produces catalog cards for all of the books that it catalogs and makes them available for purchase by libraries. For books lacking the CIP information (as well as those with it), an LC Catalog Card Number is generally supplied on the verso of the title page, as illustrated below:

Copyright © 1965, 1972 by Holt, Rinehart and Winston, Inc.
All rights reserved
Library of Congress Catalog Card Number: 72-8812

ISBN: 0-03-084403-7

Printed in the United States of America
345 038 9876543

Appendix G.
Classification System

Information on ordering Library of Congress cards is provided in the pamphlet, "Catalog Cards" which accompanies this proposal. The cost of a complete set of cards is 45¢; a deposit account may be established at the Library of Congress for the purchase of cards.

In the case of items for which neither CIP nor an LC card number is available, the cataloger must consult the Library of Congress Classification Schedule to find the appropriate class number.

Finding the correct Library of Congress number can be accomplished in a number of ways. One of the easiest approaches, as mentioned in the preceding section on subject headings, is through the Library of Congress Subject Headings- if the subject heading is chosen, the corresponding classification number is given in many cases.

Example:

Water, Holy
See Holy water
Water, Subterranean
See Water, Underground
Water, Underground *(Indirect)*
(GB1001-1197)
Cf. note under Hydrography.
sa Aquifers
Cave diving
Divining-rod

In this way, then, the Library of Congress Subject Headings can be used as an index to the Library of Congress Classification system.

If this method fails, the LC Classification Outline (a copy of which has been provided with this proposal) may be used to determine the correct schedule, then the detailed index in the particular schedule can be used to locate the number. (Unfortunately there is no overall index published for the LC Classification system.)

The following LC Classification Schedules are recommended for purchase by the Espey-Huston & Assoc. Technical Library:

Class A	General Works	$5.00
Class G	Geography (includes oceanography)	$15.00
Class H	Social Sciences	$4.25
Class Q	Science	$9.00
Class T	Technology	$3.50

A complete list of the L.S. Classification Schedules, with prices and instructions on how to order the schedules is provided on the following pages. In the pages following this list, are three pages which have been reproduced from the Q Schedule and illustrate the format of the Library of Congress Classification Schedules.

LIBRARY OF CONGRESS CLASSIFICATION SCHEDULES

A	General works: 4th ed. (1973)	$5.00
B	Philosophy. Psychology. Religion.	
	Part I. B-BJ: Philosophy. Psychology. 2d ed. (1950) Reissue with supplementary pages, 1968	2.25
	Part II. BL-BX: Religion. 2d ed. (1962)	4.50
C	Auxiliary Sciences of History. 3rd ed. (1975)	6.75
D	History: General and Old World. 2d ed. (1959) Reissue with supplementary pages, 1966	4.25
E-F	History: America. 3d ed. (1958) Reissue with supplementary pages, 1965	3.50
G	Geography. Anthropology. Recreation. 4th ed. (1976)	15.00
H	Social Sciences. 3d ed. (1950) Reissue with supplementary pages, 1965	4.25
J	Political Science. 2d ed. (1924) Reissue with supplementary pages, 1966	4.00
K	Law	6.00
	KD: Law of the United Kingdom and Ireland (1973)	5.75
	KF: Law of the United States. Prelim. ed. (1969)	5.00
L	Education. 3d ed. (1951) Reissue with supplementary pages, 1966	2.00
M	Music, Books on Music. 2d ed. (1917) Reissue with supplementary pages, 1968	2.75
N	Fine Arts. 4th ed. (1970)	3.00
P	Philology and Literature.	
	P-PA: General Philology and Linguistics. Classical Languages and Literatures (1928) Reissue with supplementary pages, 1968	3.25
	PA Supplement: Byzantine and Modern Greek Literature. Medieval and Modern Latin Literature. (1942) Reissue with supplementary pages, 1968	.75
	PB-PH: Modern European Languages. (1933) Reissue with supplementary pages, 1966	2.50
	PG: Russian Literature. (1948) Reissue with supplementary pages, 1965	2.00
	PJ-PM: Languages and Literatures of Asia, Africa, Oceania. American Indian Languages; Artificial Languages. (1935) Reissue with supplementary pages, 1965	3.25
	P-PM Supplement: Index to Languages and Dialects. 2d ed. (1957) Reissue with supplementary pages, 1965	.90
	PN, PR, PS, PZ: General Literature. English and American Literature. Fiction in English. Juvenile Literature. (1915) Reissue with supplementary pages, 1964	3.00
	PQ, Part 1: French Literature. (1936) Reissue with supplementary pages, 1966	1.75
	PQ, Part 2: Italian, Spanish, and Portuguese Literatures. (1937) Reissue with supplementary pages, 1965	2.00
	PT, Part 1: German Literature. (1938) Reissue with supplementary pages, 1966	2.35
	PT, Part 2: Dutch and Scandinavian Literatures. (1942) Reissue with supplementary pages, 1965	1.00
Q	Science. 6th ed. (1973)	9.00
R	Medicine. 3d ed. (1952) Reissue with supplementary pages, 1966	2.00
S	Agriculture, etc. 3d ed. (1948) Reissue with supplementary pages, 1965	1.75
T	Technology. 5th ed. (1971)	3.50
U	Military Science. 4th ed. (1974)	5.00
V	Naval Science. 3d ed. (1974)	5.25
Z	Bibliography. Library Science. 4th ed. (1959) Reissue with supplementary pages, 1965	2.25

INSTRUCTIONS FOR ORDERING CATALOGS AND PUBLICATIONS FROM THE CATALOGING DISTRIBUTION SERVICE

GENERAL

The current issues of all catalogs and publications described in this brochure are available from the Library of Congress Cataloging Distribution Service. Catalogs from prior years that are cumulated and sold by publishers are also described in this brochure. Inquiries and orders for such publications should be sent directly to the appropriate publisher.

Detailed information brochures are also available upon request for the following services:

Catalog Cards
Machine Readable Cataloging (MARC Tapes)
Proofsheets

All correspondence regarding information or services should be directed to:

Cataloging Distribution Service
Library of Congress
Building 159, Navy Yard Annex
Washington, D.C. 20541

Convenient CDS telephone numbers:

Accounts Receivable Unit (bills-credits-payments)	202-426-6104
Customer Services Section (general information)	202-426-6171
Subscriber Accounts Unit (new accounts-ordering information)	202-426-6100

Geographical distribution
Physiographic divisions
Water. Aquatic biology - Continued

90.7 Museums. Exhibitions
Subarranged like Q105
Serial publications, see QH90.A1A-Z

.75 Aquatic parks and reserves
.A1A-Z General works, treatises, and textbooks
.A3-Z By region or country, A-Z

.8 Special topics, A-Z
Ecology, see QH541.5.W3
.P5 Plankton (General)
Cf. QH91.8.P5, Marine plankton
QH96.8.P5, Freshwater plankton
QK933-935, Phytoplankton
QL123, Zooplankton

91-91.8 Marine biology
Subarranged like QH90-90.8 except as modified below

91.57 Research methods and apparatus
.A1A-Z General works, treatises, and textbooks
.A3-Z Special, A-Z
.A4 Aeronautics
.D7 Dredging
.P4 Photosynthesis determination
.P5 Plankton sampling

.8 Special topics, A-Z
.B4 Benthos
.B5 Biological chemistry
Ecology, see QH541.5.S3
.M3 Marine boring and fouling organisms
.O4 Oil pollution
.P5 Plankton

By region

92 Atlantic Ocean
.1 North Atlantic
.2 Coast of North America
.3 Gulf of Mexico
.4 Caribbean Sea
.5 Other, A-Z
.6 Coast of Europe
.7 Baltic Sea
.8 North Sea
.9 Other, A-Z

93 Mediterranean Sea
.1 Adriatic Sea
.2 Aegean Sea
.3 Black Sea
.4 Caspian Sea
.5 Other, A-Z
.6 South Atlantic
.7 Coast of Africa
.75 Gulf of Guinea
.8 Coast of South America
.9 Other, A-Z

94 Indian Ocean
.2 Arabian Sea
.3 Red Sea
.4 Persian Gulf
.5 Bay of Bengal
.7 Other, A-Z

NATURAL HISTORY (GENERAL)

Geographical distribution
Physiographic divisions
Water. Aquatic biology
Marine biology
By region - Continued

95 Pacific Ocean
.1 North Pacific
.2 Coast of Asia
.22 China Sea
.23 Yellow Sea
.24 Japan Sea
.25 Sea of Okhotsk
.26 Bering Sea
.28 Other, A-Z
.3 Coast of North America
.35 Gulf of Alaska
.4 Coast of Mexico and Central America
.45 Other, A-Z
.5 South Pacific
.52 Coast of South America
.52 Coral Sea
.54 Tasman Sea
.55 Other, A-Z
.56 Arctic Ocean
Including polar oceans
.57 Arctic seas, A-Z
.58 Antarctic Ocean
.6 Inland seas, A-Z
Cf. QH93.4, Caspian Sea
.7 Seashore biology
.9 Brackish water
96-96.8 Freshwater biology. Limnology
Subarranged like QH90-90.8 except as modified below
Prefer classification by area, QH101-198
96.8 Special topics, A-Z
Ecology, see QH541.5.F7
.P5 Plankton
Special freshwater environments
97 Streams
98 Lakes. Ponds
99 Springs
100 Snow and ice
Topographical divisions
101 America
102 North America
United States
104 General works
.5 By region, A-Z
.A6 Appalachian Mountains
.C45 Chesapeake Bay
.M45 Middle Atlantic States
.M47 Middle West
.M5 Mississippi Valley
.N4 New England
.N6 Northwest, Pacific
.O9 Ozark Mountains
.R6 Rocky Mountains
.S5 Great Smoky Mountains
.S6 Southwest
.W4 The West

Nature conservation. Landscape protection - Continued
By region or country
United States
76 General works
.5 By region or state, A-Z
77 Other regions or countries, A-Z
81 Addresses, essays, lectures. Nature books
Cf. QH53, School manuals of nature study
SK600-510, Camping, outdoor life
(82) Natural history of the Bible, see BS660-667
83 Classification. Nomenclature
.5 Terminology, notation, abbreviations
Geographical distribution
84 General works, treatises, and textbooks
.1 Arctic regions
.2 Antarctic regions
.3 Temperate regions
.5 Tropical regions
Physiographic divisions
Land
.8 Soils
85 Islands
86 Forests
87 Mountains
.3 Wetlands (Marshes, swamps, etc.)
.5 Moors and heaths
.7 Prairies. Grasslands
88 Deserts
.5 Dunes
89 Caves
Water. Aquatic biology
90.A1A-Z Periodicals, societies, serial collections, yearbooks
.A3A-Z Congresses
.A4A-Z Collected works (nonserial)
.A5-Z General works, treatises, and textbooks
.1 Addresses, essays, lectures
.15 Popular works
.16 Juvenile works
.17 Pictorial works and atlases
.2 Dictionaries and encyclopedias
.25 History
.A1A-Z General works
.A3-Z By region or country, A-Z
.3 Biography
.A2A-Z Collective
.A3-Z Individual, A-Z
.35 Directories
.45 Aquatic biology as a profession
.5 Study and teaching. Research
.53 Outlines, syllabi
.55 Laboratory manuals
.56 Collecting and preservation
.57 Research methods and apparatus
.A1A-Z General works, treatises, and textbooks
.A3-Z Special, A-Z
.D7 Dredging
.6-65 Laboratories and stations
Subarranged like QD51-51.5
Prefer classification under QH91.65 or QH96.65